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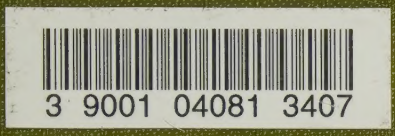

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THE HOUSE THAT LOVE BUILT

An Italian Renaissance Temple to Arts and Letters

W. FRANCKLYN PARIS

THE HADDON PRESS
NEW YORK
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Dedicated to Cass Gilbert
as a token of admiration
and esteem

186587

"In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part;
For the gods see everywhere."

—LONGFELLOW

CRAFT pride is a pardonable form of vanity and the artist or craftsman who is conscious of having wrought a thing of beauty should be forgiven the perfectly natural impulse to point it out to his fellows and to say: "Behold, this I have done."

Sir Christopher Wrenn causing to be inscribed upon his tomb in St. Paul's Cathedral, which was one his achievements as an architect, "Si monumentum requiris circumspice," and the French grenadier who boasted that he had been with Bonaparte at Lodi respond to the same sentiment, the sentiment of the writer of this book, a modest artisan conscious of having accomplished his task creditably and proud of having fought a good fight under a great commander and alongside of loyal comrades.

The fame of this great commander, Cass Gilbert, creator of such marvels of architecture as the Woolworth Building, the New York Custom House, the Libraries of St. Louis, New Haven and Detroit, the

State Capitols of St. Paul and Little Rock, is too firmly established to need further proclaiming, but the debt of gratitude contracted towards fellow craftsmen who have helped in giving color and form to the concepts of the master architect is one that must be acknowledged.

When Henri IV set aside a wing of his palace for the housing of artists and master craftsmen who had gained prominence in their respective metiers and appointed them Serrurier du Roy, like Rossignol, or Marqueteur du Roy, like Pantaléon, a precedent was established for the recognition of beauty and artistry and honest workmanship in forms of art other than paintings or statues. The weaver who translated into wool the painted tapestry cartons of Rafael, or Jules Romain, or Boucher, was deemed entitled to share the credit, and his name was preserved. The glazier who assembled and set in place the painted glass of the Chartres cathedral was considered to have done as much for art as the monk or lay artist who designed the windows and drew their outline on paper or canvas or wood, and his fame was perpetuated. At a later day, Louis XIV created a nobility of craftsmen and artisans by maintaining as royal pensioners in the Galleries du Louvre the artists who fashioned his furniture and decorated his palaces. André Charles

Boulle, Philippe Poitou, Pierre Golle, Jean Macé are more than royal ébénistes or menuisiers, more than mere carpenters and wood carvers with a royal patent, they are creators of art, craftsmen of individuality and genius.

It has seemed to the author of this Critique of the decorations of the Detroit Public Library that if the contemporaries of Louis XIV could give credit to Robert Pinaigrier and Jean Cousin for their cathedral windows, to Bisconet and Mathurin Jousse for their wrought-iron work, to Van Aelst and Pennemaker for their tapestries, to Caffieri for his bronzes and to Boulle for his marquetry, the contemporaries of Henry Ford might be interested to know the names of the craftsmen and artisans who had contributed to the embellishment of the Detroit Public Library.

It is with a sense of accomplishing a duty and of distributing praise in quarters where it is not frequently received that I acknowledge my debt and that of my associate, Frederick J. Wiley, to John Donnelly, Oswald C. Hoepfner, Jeremiah Grandelis, George O. Bonawit, John D. Bowen, Fred C. Martin, Charles Shean, John Watson, Charles Collin, Jules Vibert, Emidio Milano, and John Hendrickson for intelligent coöperation in the preparation and true artistry in the execution

of the designs and cartoons entering into the decoration of this truly inspiring edifice. Some of these faithful and talented artists and artisans have been loyal coöperators for a quarter of a century.

These men, in the words of Longfellow, wrought "each minute and unseen part" with the consciousness that "the gods see everywhere."

An Italian Renaissance Temple
To Arts and Letters

THE DETROIT PUBLIC LIBRARY

THE LIBRARY

"Un vaste et tendre apaisement."

—VERLAINE

IN an age given over to Utilitarianism, when the popular idea of "Efficiency" consists in filling every hour of the day with occupation that will yield "results," and when "results" mean only effects collectible at the bank, it is both a joy and an encouragement to behold such a center of commercialism as is Detroit turning long enough from the manufacture of automobiles to buy hyacinths for its soul.

The City of the Straits has just expended several millions in the erection of a commercially non-productive building—a public library—and as a reward for this sacrifice on the altar of intellectualism and art, the Fates, in coöperation with one man, have given Detroit a library that surpasses in beauty and fragrance all the hyacinths of this character ever grown in the municipal gardens of this land of Positivism and Pelf.

This is not giving faint praise, for there is a certain routine excellence about the best of our public libraries—an assurance that time-honored effects will be duly made, a precision entirely safe and correct—but the Detroit library has what a majority of the others lack. It has a soul.

Feelingless or prosaic art is, properly speaking, not fine art at all, and if "stone walls do not a prison make," neither can they make a library or a church. At most, they will make a warehouse for books, or a shelter for worshippers. Before you can breathe life into such an edifice, you must mix a little of your own emotion with the mortar, and this the architect of the Detroit library has done.

When you learn that this architect is Cass Gilbert, own brother to Bramante and Michelangelo and first cousin of Brunelleschi and Palladio, you marvel less at the harmony and grace, the joy and beauty that radiate from the Italian Renaissance edifice with which he has endowed the automobile city. Mr. Gilbert is our leading architect, but what mortal is there who can go on indefinitely doing great and glorious works and have each succeeding one better than that which preceded it?

Mr. Gilbert has other libraries to his credit, the New Haven Public Library and the St. Louis Public Library, and, like everything that he does, they

possess character and great beauty, but his latest creation shows that the Muses smile on him with increasing favor and that his leadership is in no danger of being usurped.

Mr. Gilbert himself does not speak of his achievements. The true artist is timid about his work and it embarrasses him to be asked to discuss it. It is only when this or that full-fledged goose has produced his goose-egg that cackling and strutting are in evidence.

Mr. Gilbert will tell you about libraries in general but he will tell you nothing about *his* libraries. He believes that a library is not only a repository for books, but a symbol of the cultural life of the community. He believes that it should be housed in a building notable for its architectural expression and evocative of thought and perfect rhythm. "It would be as improper," he will tell you, "to house a library in a building that was 'illiterate' in its architecture as to fill it with books written in an illiterate manner. A library should create an environment of scholarship and refinement; it fails of its purpose as an educative factor if it is other than a beautiful building."

The Detroit Public Library is a beautiful building.

The site provided for it along Woodward Ave-

nue, the city's main thoroughfare, was ample enough to permit an approach of terraces and the setting back of the edifice far enough from the street to allow an ensemble view from the proper distance. The building is almost square (196 ft. by 219 ft.) and rises to a height of sixty feet, a "vaste et tendre apaisement" in white marble with a cornice crowned by a cheneau of néo-grec type executed in terra cotta of old ivory tone backed with gold.

The style is early Italian Renaissance of the period of Sangallo and Peruzzi, of Brunelleschi and Sansovino, when sentiment was not considered a weakness and skill of execution went hand in hand with elevation of thought.

When Mr. Gilbert was invited to submit a design for the Detroit library he readily solved the problem of horizontal divisions, distribution of masses and the relativity and proportions of the various floors and rooms, but his inward eye viewed the façade vaguely and he set off for Italy to revive his memories of the Villa Papa Julio, the Villa Madama, the Farnesina Palace, the Loggia of Rafaelle, the Cancelleria and the other flowers of architecture of that golden era scattered over the peninsula from Florence to Rome and from Venice to Siena.

Winning Design in Architects' Competition

"Un Vaste et Tendre Apaisement"

The characteristic of right performance is a certain spontaneity, an unconsciousness. Having the eye to see, the heart to feel, the artist must yet have the hand to draw and the voice to sing. Mr. Gilbert is well endowed with both hand and voice and his work is never lacking in personality. Of no living architect can it be said more truly that he creates and does not merely manufacture. He is big enough, however, to acknowledge his indebtedness to the torch bearers of the past and to sit at the feet of Rafaelle Sanzio and Michelangelo Buonarroti.

To say, therefore, that the Detroit Public Library without being in the least fashioned after the Vatican, or the Villa Chigi, or San Lorenzo, yet gives forth the same perfume as these wonderful flowers of the Italian Renaissance is not to take away the least particle of Mr. Gilbert's credit.

Like Rude's statue of Marshal Ney, it is arrested motion, if the metaphor may be used in connection with a building. It is perfect rhythm immobilized, a song in marble, the grace of movement without movement. You cannot get away from the idea of music and poetry as you gaze at this architectural symphony.

There are four floors, although the façade only "accuses" three, the mezzanine floor being lighted from wall openings in the side elevations only, but

the dominant horizontal division is the first floor, which has a height of ceiling of twenty-five feet and provides the raison d'être for the splendid succession of noble arches on three sides of the building.

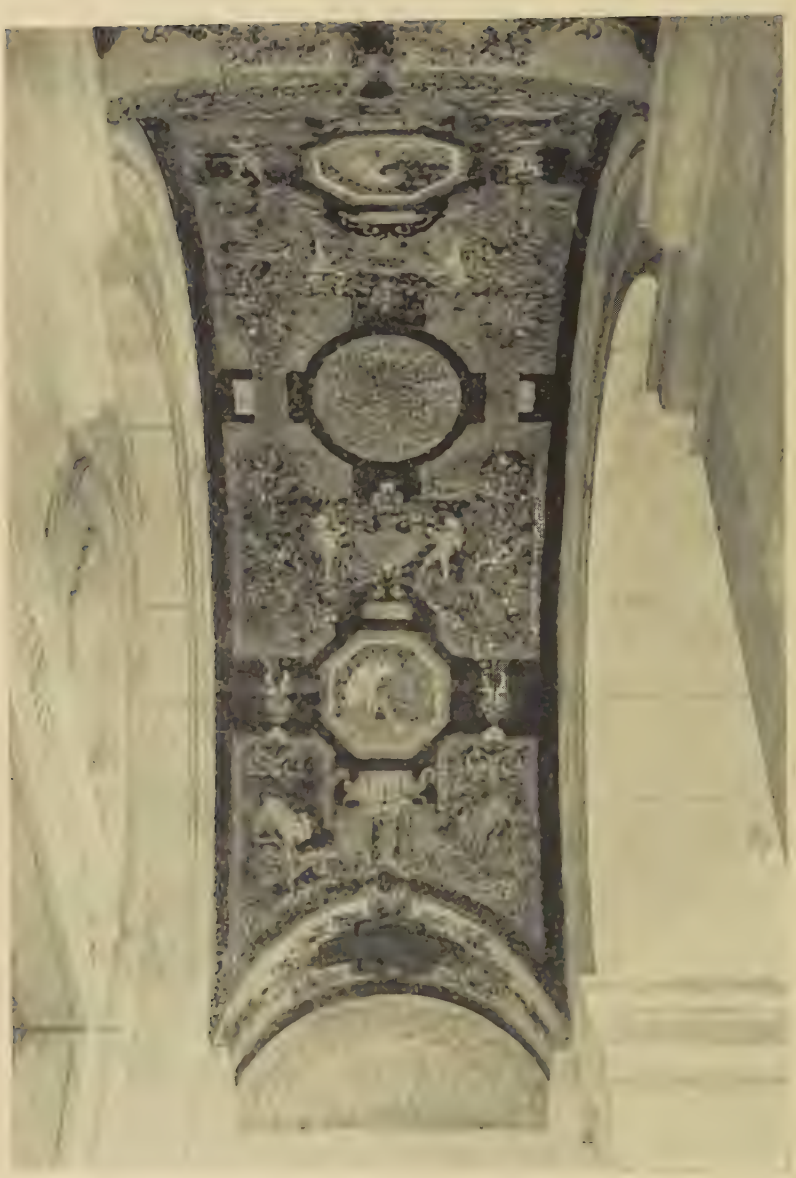
Along the façade, these arches are disposed in a group of seven en suite, with two more detached and disposed, one on either side of the seven open bays.

Flanking each arch is a noble Ionic pilaster of great purity of design, rising the full twenty-five feet of the first floor. All twelve of these pilasters are subordinated to the arches which they frame, and accentuate the fine sweep of line of these openings. The central arcade forms a monumental loggia, or sheltered arcade, which strikes the eye with perfect expectedness and is yet the distinctive architectural feature of the façade.

The ceiling of this loggia is gay with mosaic of rich coloring, a series of garlands and small medallions in which you catch the faint echo of an echo. It evokes a memory of the Roman arabesques of the Loggia of Rafaelle and of the frescoes of the Sala del Cambio at Perugia.

Mr. Gilbert was happy, in his search for an artist to interpret his conception of what this mosaic decoration should be, to find in Frederick J. Wiley a

Perfect Rhythm Immobilized



Mosaic of Seven Ages

painter of talent and a decorator of taste, who has designed on the theme of Shakespeare's Seven Ages of Man a series of lovely ornamental compositions, so delicate in tracery that they appear to be brush work, and not the laborious assembling of thousands of multi-colored tesserae.

Mr. Wiley is a native of Detroit and in his work of lending beauty to the Loggia, the ceilings and the painted glass of the Library, he has labored with the fervor of a lover fashioning a gift for the Goddess of his native heath.

The lower floor presents the peculiarity of being lighted by eight rectangular wall openings, which balance the vertical divisions of the upper floors, and six smaller openings that are in a measure dissimulated in order to give more massiveness and solidity to what is the base and foundation of the structure. The small openings have the advantage of supplying just the right amount of light to the rooms from which they open. These rooms being relatively small must be lighted by a quiet, natural light without glare, and large windows would not only have impaired the appearance of solidity of the base of the building, but would have drenched the interior with a light too fierce for restful reading.

Mr. Gilbert here was confronted with a choice

of difficulties. It is not easy to distribute along the same level and at irregular intervals eight large windows, almost square, and six small ones that are narrow and long. At first blush it would seem as if all feeling of symmetry must vanish under such an arrangement. The architect has solved the problem by giving a deep recess to the large openings and almost no recess at all to the smaller windows, so that the larger wall openings alone stand out as architectural and structural features, while the small windows assume a neutral character and appear as applied ornament. The wall, thanks to this treatment, appears to be pierced in only eight places instead of fourteen.

The care exercised in preserving the effect of strength is apparent in other parts of the façade. This shows a deep study of the third dimension, a grappling with the problems of proportions not only in height and width, but also in the depth back from the surface. The thickness of the walls, while not excessive, is adequate to convey the idea of solidity and permanence. The cornice, the depth of the loggia, every exterior detail gives evidence of having been carefully considered as far as recessing and projection are concerned. The result is a monument that is graceful without being frail and beautiful without being effeminate or decadent.

The Small Windows Appear as Applied Ornament

A Splendid Cornice Dominates the Entire Structure

Models for Marble Carving in Cornice

Models for Facade Carving

Mr. Gilbert's concern for proportion is shown also in his treatment of the topmost story, which he has used as an intervening frieze between the delicate pilastering of the second story and the splendid cornice which dominates the entire structure.

This upper story is pierced with nine wall openings to correspond with the nine arches of the lower floor, and is richly adorned with twelve sculptural panels in vertical alignment with the twelve pilasters of the main story. These panels are in low relief and portray the signs of the zodiac and their equivalents in ancient mythology. Although distant from the eye some fifty feet or more, this decoration is remarkable for its detail and for the ornamental values obtained. It sets off the cornice without detracting from its importance in much the same manner as the balustraded terrace sets off the base of the edifice for which it serves as a plinth.

The cornice itself shows great intellectual command of form and is a masterly combination of simplicity and homogeneity of plan with elegance and variety of detail. In it are harmony and light, serenity and grace, joy and beauty. Its perfect balance with the rest of the structure, the impeccability of its proportions reveal the architect's complex talent, made of nature and art, of culture and instinct, of spontaneity and reflection.

The world is full of noble edifices whose perfection has been marred by too scant, or too massive, a crown. It is here that an error in proportions shocks the eye with greatest violence. Sometimes a few inches in height or in projection are enough to destroy the balance of the whole structure.

The library of San Marco in Venice, to cite but one instance, fails to suggest the idea of unity of structure because of the balustrade and statues which crown the edifice and which are in balance with the story immediately below, but out of scale with the composition as a whole. The effect is produced of one structure superimposed upon another. A cornice which is well proportioned to the arcade or colonnade below must be on a scale related to the colonnade. On the other hand, after all is said and done, the cornice is the cornice of the entire building, and that which is adequate for the colonnade of a single story is inadequate for the entire building, if for no other reason than that it is placed at a greater height.

Sansovino's library frankly accepts the proposition that it consists of two superimposed "orders," or arcades, embellished with attached columns of practically equal importance. In its way, it is one of the world's most beautiful buildings, but the

cornice is a discordant note in an otherwise perfect melody.

In the Detroit library we have a very simple vertical composition consisting of a broad base constituting the first story, and a single "order" of pilasters and arches forming the second story. A cornice which would have been acceptable for the "order" of the second story only, would not have been adequate for the full height of the building, and for this reason: the "order" of the second story is very skillfully subordinated to a broad frieze and cornice which dominate the whole structure. In other words, you are made to feel that the cornice is the cornice of the entire edifice and not the cornice of only part of the structure.

The fact that it does not overweigh the refined architecture of the second story is due to the interposition of the frieze. Imposed directly upon the pilasters and arches of the second story it would have crushed them and killed the rhythm and repose of the entire composition.

The cornice is crowned by a cheneau, executed in terra cotta of old ivory tone backed with gold. There is just enough contrast with the marble of the rest of the building to accentuate the richness of the design and to illuminate the crest of the

monument as it outlines itself against the blue or gray of the sky above.

This touch of gold in the cornice, and the gay mosaic within the loggia, combine with the texture of the white marble to give to the exterior of the building a chromatic tone that adds not a little to the visual delight caused by the perfect equilibrium of form and the classic simplicity of line evidenced in every part of this modern temple to Minerva.

Done in granite or in any other stone than marble it would have looked severe and cold. As it is, it has a "complexion" that blushes with the setting sun and glows under the light of midday. Every changing light brings with it a new tint, gray when the day is gray, golden when the day is bright. In the evening you will find soft violet shadows, in the morning delicate pink will color the surface. You feel the penetration of light into the surface of marble as in no other material. Every angle, every molding not only reflects the sun, but absorbs it, thus softening the glare and deepening the shadows.

The applied decoration is laid on sparingly, but wherever used the contours have been very fully developed, so that no matter how low the relief, the outline is very distinct and the feeling of depth very strong. This is particularly true of the carving

Perfect Equilibrium of Form and Classic Simplicity of Line

The Applied Decoration Is Laid on Sparingly

The Site Permits an Approach of Terraces

The Bronze Doors Are Inspired by Donatello

in the loggia, which is of the purest late fifteenth and early sixteenth century style, and adorns the windows and the tympanum under them with a wealth of delicate découpure, such as Donatello or Ghiberti might have chiseled.

Wherever marble or bronze carry relief ornamentation the eye is charmed with the purity of the design and the definiteness of line, the sharp and yet soft quality of every contour. It is no secret that Mr. Gilbert and his talented pupil and associate, John R. Rockart, spent happy hours together composing this applied decoration and reviewing and amending the designs that were to be finally modeled by master hands.

Originally it had been intended to center seven sculptured figures, one under each arch of the frontal colonnade, but it was decided that the simple openings were better unencumbered with statues. The value of the shadow cast by the unobstructed opening is much greater than the irregular broken shadow, partly on sculpture and partly retreating, would have been. The statues would have confused the façade and might also have impaired the natural lighting of the interior.

The bronze doors that give entrance into the building deserve special mention. The motif is from a scheme by Donatello. It consists of ten

panels in which are depicted five Roman and five Greek episodes touching upon Epic, Tragic and Lyric poetry, Philosophy and Comedy. The composition is very simple and calls for but two figures to each panel.

The subjects depicted are as follows:

GREEK	ROMAN
1. Aged Homer, as blind bard reciting epic poetry.	2. Virgil receiving honors from the Emperor Augustus.
3. Reception of Aeschylus at the court of Hiero, King of Sicily.	4. Seneca teaching the young Emperor Nero.
5. Sappho teaching maidens of her school.	6. Horace reading his works to his patron Maecenas.
7. Aristotle walking with the young Alexander.	8. The baptism of Augustine by St. Ambrose.
9. Aristophanes teaching the young actor.	10. Young Terence reading his first play to Caecilius.

To have treated these panels after the manner of the famous doors of the Baptistry by Ghiberti would have added perhaps to their pictorial value, but it would certainly have spoiled the decorative effect. In the Baptistry doors, each panel pictures a biblical scene, done with a profusion of detail, and the whole is undoubtedly a work of art of the highest order. If you step away from the doors far enough to view them as part of the edifice, however, you no longer see the beauty of this fine detail and the doors become everyday doors, without any particular character.

Plaster Original for Bronze Doors

The Liquid Coldness of Stone That Has Never Felt the Sun

The Detroit library doors, on the contrary, "carry" their decorative effect at a distance. The relief is very low, scarcely half an inch above the surface, but the outline is sharp and very clearly defined, and because of the small number of personages the design stands out as an ornament even after it has ceased to stand out as a picture.

The white Vermont marble into which these doors are set is delicately carved and, being from plaster models modeled by the same sculptor who fashioned the bronze portals, the two harmonize perfectly. The carved heads in the rondels of the arched openings of the first floor are by the same hand. They portray eminent writers, poets, philosophers and scientists whose names are carved on the beltcourse of the first floor level.

Before going into a description of the interior, it may not be amiss to say a word about the various considerations, other than esthetic, that the architect planning a library must have in mind.

A public library is primarily a working organization and it is incumbent upon its designer to plan its subdivisions so as to afford the greatest convenience to both the patrons of the library and to its operatives. To quote Mr. Gilbert himself, "a library should not be condemned because it is merely beautiful, nor praised because it is only conveni-

ently planned. It should have both convenience and beauty, and both are possible."

A library, considered from the standpoint of service, must be adapted to the practical exigencies of handling books and documents for the current use of a large and varied constituency. A central Public Library for a city of, say, a million inhabitants, from which the administration of many branch libraries is conducted, and from which great numbers of books are from time to time issued, includes many separate departments, each of which must be installed in its proper relationship to the whole.

The accessibility of the main reading room; its location in respect to the base of supplies: the stack room where storage space must be provided for a half-million books; the distribution of light; the subduing of all noises; the unobtrusive disposition of executive offices, bindery, shipping and packing rooms, lockers, toilets, etc., are problems not always easy of solution.

In a number of modern Public Library buildings the main reading room is at the top of the building, above the stack room, on the theory that all books would be delivered by mechanical devices from below. This materially affects the exterior design. It also compels everyone who comes for a

book to go to the top of the building for it, while the book itself must also travel to the top of the building to meet the reader.

The Detroit Public Library is planned on the theory that the public must come to the books and the books to the public, the two meeting at a central point. The Delivery Hall, which is the center of activities of the library, is therefore situated on the first floor, while the stack room occupies the rear of the building and extends over the full height and the full width of the entire edifice. Surrounding the Delivery Hall and directly connected therewith are the Open Shelf Room, the Reference Reading Room, the Fine Arts Room, the Social Science Room, the Music and Drama Room, the Public Catalogue Room, the Conversation and Correspondence Room, and the Registration and Circulation Room.

The business offices, together with the Book Order Department, a Storage Room and the public lavatories are located on a mezzanine floor, between the ground and first floor, while the second floor houses the Patent Room, the Industrial Arts Room, the Staff Assembly Room, the Burton Collection Room and minor rooms used as club, rest, recreation and lunch rooms, pantry, kitchen, photographing room, etc.

On the ground floor, the principal divisions are the Newspaper and Periodical Room and the Children's Room, which open on either side of the entrance hall.

As will be seen, this arrangement leaves nothing to be desired on the score of convenience. The important departments occupy the most commodious and most accessible locations, while the subsidiary activities are conducted in relatively out of the way places. It is not by accident that the Children's Room is on the ground floor with a special entrance all its own, or that the executive offices are tucked away on the mezzanine floor.

The stack room, with shelving for 650,000 volumes, is a model of its kind.

It consists of seven tiers of metal stacks with floors of white carrara glass which reflects the natural light provided by the window openings. Stairs provide connection with all tiers and electric book lifts provide convenient transfer of books from tier to tier. Although the fire hazard is very slight, provision has been made for the complete separation in case of fire, of the stack room and its precious contents from the rest of the building.

So much for the practicalness of the edifice.

Coming now to its interior embellishments, we are first confronted with the entrance hall, which

Chaste Roman Doric Columns Hewn Out of Tennessee Marble

The Tone of the Marble Has Influenced the Choice of the Colors

leads to the main stairway through a colonnade of chaste Roman Doric columns hewn out of Tennessee marble. Here again the insensate material exudes an emotion. The liquid coldness of stone arches that have never felt the sun, the purity of line, the perfect rhythm between height and width, the harmony of form and color, evoke a sentiment of restfulness, of quiet without languor, of dignity without pomp. A rich coffered ceiling of the purest sixteenth century style with caissons and rosettes in high plaster relief touched with gold, and with touches of soft faded color spread with an artist hand over the flat surfaces of the background, lends a note of cheerfulness to the general ensemble.

Incidentally, this idea of relieving the classic severity of the walls and the sobriety of the general design with a ceiling of gorgeous coloring and elaborate carving is carried through in all the principal rooms of the library. The pink gray of the marble of the Entrance Hall, like the light shade of buff gray of the Bedford Indiana stone of the vast Delivery Room, offer a fine setting for this overhead flowering and the effect is recreative and at the same time full of dignity.

The most elaborate of all the ceilings is that which arches over the tripartite stairway of Tennessee marble and extends the entire width of the

building in the form of a barrel vault broken by arches corresponding with the exterior arcade of the Loggia.

This has been treated much in the manner of the Rafaelle arabesques in the Vatican. Because of the generous mural space available and the presence of two spacious demi-lunes at either extremity of the vaulting there has been installed, in addition, pictorial canvases by Blashfield. The effect of magnificence from so much color is tempered by the naked marble of the stairs and walls, so that no feeling of extravagance, or pompousness, is experienced.

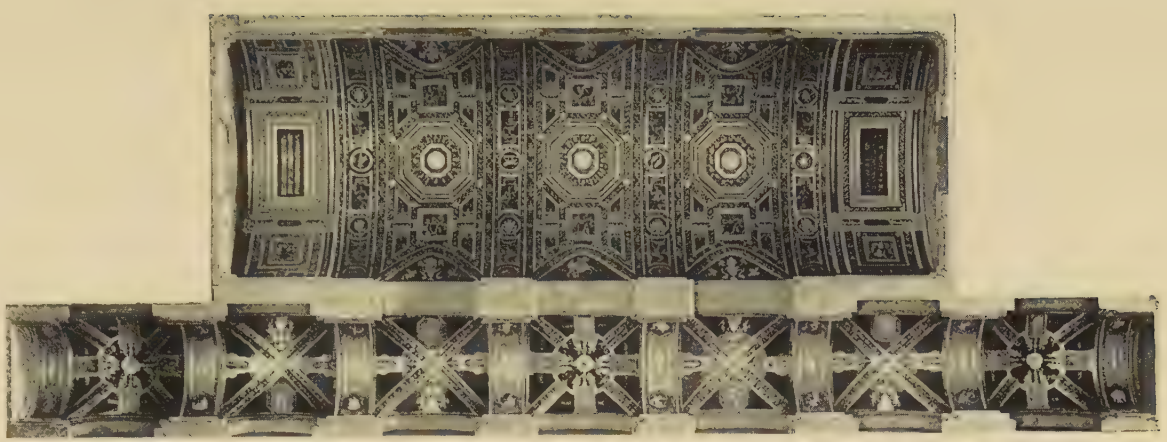
Opening from the stair landing through a handsomely carved doorway is the show room of the Library, the great Delivery Room.

Rising thirty-six feet in height of ceiling, and measuring seventy-five feet by seventy-five feet in floor area, it is indeed palatial in proportions.

All four walls are broken by a trio of splendid arches, edged with bronze trim of exquisite design carved in low relief and supplemented with grilles and doors where the arch ceases to be a window and becomes a means of egress and ingress. The massive simplicity of the walls and floor permits elaborateness in the ceiling, which is in deeper relief than those of the smaller rooms and richer in

The Most Imposing of These Plafonds Spans the Main Stairway

The Room Is One of Noble Proportions



Ensemble View of Model for Corridor Ceiling

Cameo-Like Cartouches of a Pompeian Flavor

composition and gilding. This wonderful plafond is a geometrical arrangement of caissons and rosettes, following closely the pattern of the ceiling of the small nave in St. Peters of Rome. The coloring is of a lapis blue, with peacock tints of green. The combination, with the gold of the background, is of very sumptuous effect.

In order to make the transition between the elaborately carved ceiling and the severely plain walls less sudden, a wide frieze with inscriptions runs along the four sides of the room. Between the arches are shields in molded rondels that also lend an ornamental touch. The three large panels of the east wall contain mural paintings by Gari Melchers.

The Fine Arts Room, the Music and Drama Room and the Social Science Room, while not as lofty and monumental as the Delivery Room, are yet of noble proportions. The ceilings are not as lavish in color and gold as the plafond of the higher and larger apartment, but they are in the best Renaissance manner, soft in tone and rich in design.

The Fine Arts Room walls are painted a faded mulberry color and this shade dominates in the coloring of the square caissons of the ceiling. A frieze

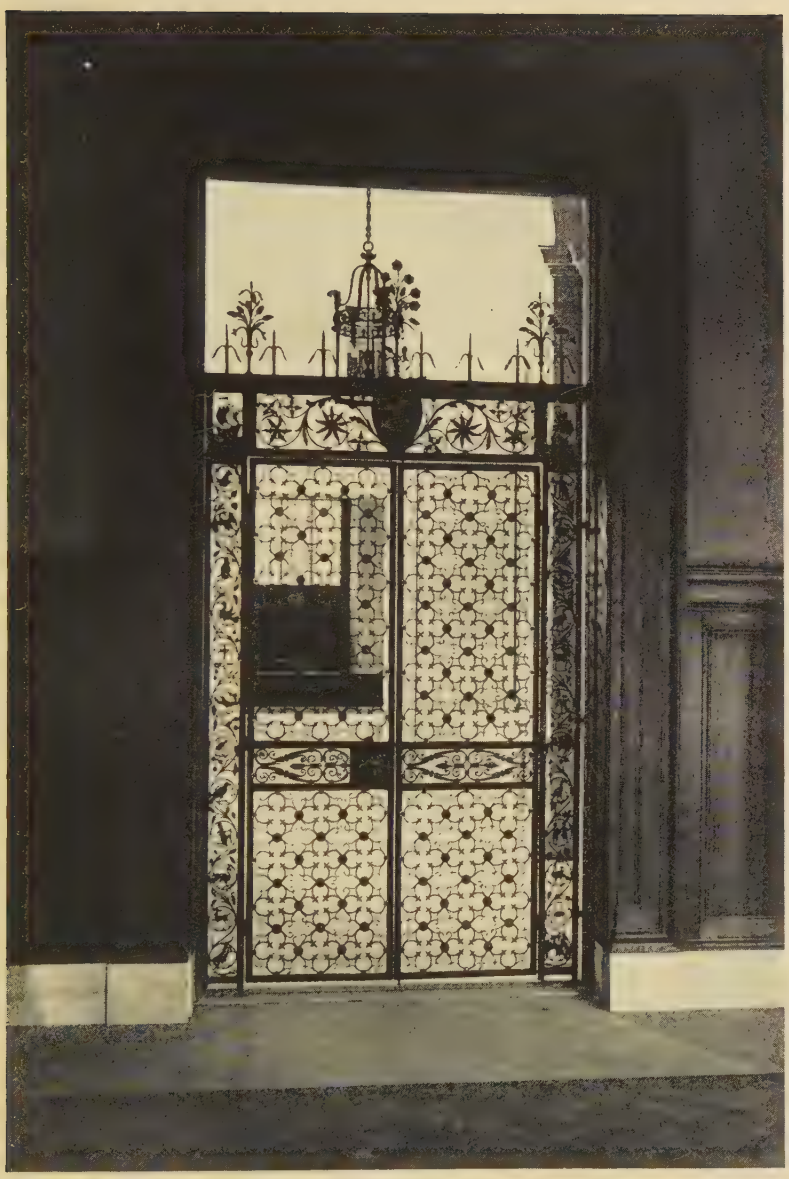
of rectangular panels with Pompeian grotesque decoration runs along the four sides of the room.

The ceiling of the Music and Drama Room is an adaptation of the design of one of the famous ceilings of the Mantùa Ducal Palace. The dominant color is blue and there are four different motifs repeated in octagonal caissons and small square panels.

The Social Science ceiling is supported by pendentives, or corbels, richly carved in very low relief, and contains a center medallion after Veronese. There are also minor painted decorations in small lunettes.

Because of the idea of unity of command, the absolute authority vested in the person of the architect, the will and the taste of the same artist dictating every detail of ornamentation, every accessory and adjunct, we find every appurtenance, every unit of adornment or furnishing designed and executed with an eye to its fitting perfectly in the space where it is installed and being in effect the natural and obvious complement of the larger composition in which it is set.

We might expatiate on the beautiful bronze candelabra that flank the entrance, or the hanging lights that are suspended from the elaborate ceiling of the Delivery Room. We have said very little



Wrought Iron Gate to Fine Arts Room

The Corridor Ceiling Harmonizes With the Barrel Vault

of the wonderful bronze work in the entablatures over the five entrances to the Delivery Room, but it is not possible to give a detailed description of all the beauties which the Detroit library contains. What the writer has tried to do is to present to those who cannot view these beauties "in situ" an idea of the "spirit" of this work of art.

After all, a restaurant menu or a court summons can be set in the same type as a beautiful poem. It is not the method of expression that counts, but the thing that is expressed.

The great thing, the rare thing, in an architectural composition is for it to bring forth an emotion. Intelligence is not love, and thought cannot take the place of feeling. The only way for an artist or a poet to stir the imagination and to move the heart is for him to feel deeply, to speak with sincerity, to be human and real.

The Detroit Public Library is "un vaste et tendre apaisement" because the man who designed it called to the task not only a skilled and cultured intelligence, but a heart attuned, to beauty and the soul of a poet.

CEILINGS

THERE is a certain sober melancholy about large cities, particularly those in northern latitudes, which the fancy of an artist might well ascribe to color, or the lack of it.

Where a million inhabitants, each garbed in neutral tints, encumber the landscape, it is not likely to emerge as festive and joyful as when the perspective is sparsely dotted with figures decked in primary colors. When this million moves between smoke-grimed buildings prosaic in outline and monotonous in their uniformity, the ensemble is cheerless and the atmosphere solemn and depressing.

In countries "where it is always afternoon," the natives attune their costume and their habitations to nature's color scheme and the houses are white, and sometimes pink, and occasionally frescoed with rainbow-colored decorations. The Parthenon was once gaudy with colors and there are any number of frescoed façades in Italy upon which time has but faintly dimmed the brilliancy of the original pigment.

If bright colors induce a sensation of gayety and light-heartedness, it would seem as if their use were more needed in localities which the sun visits grudgingly than in cities basking under its golden radiance; and yet, the dress and the habitations of men are gayest in sunny climates and most somber in regions where fog and smoke are prevalent.

While Detroit is not "the City of Dreadful Night," it cannot be claimed for it that it lies along the "côte d'azur," or that its sky is always blue. The architect of the Detroit Public Library deserves great commendation therefore for having bedecked it with gay mosaics and a golden cornice on the outside, and with gorgeously colored ceilings on the inside.

In the matter of ceilings, Nature has given us the cue and set the model for all artists to follow. In the caparisoning of the "dome of Heaven" we find inspiration for the decorating of what we have overhead indoors. Just as a leaden sky is depressing and tedious to the eye, just so a flat monochrome or white ceiling is neurasthenic in character and dispiriting in its effect.

It is no doubt because of this that the architect of the Universe paints the ceiling of the Cosmos with such a variety of outline and such a wealth of coloring. There seems to be two methods in Na-

ture, just as there are two methods in human practice. By day the sky is painted over with masses of color in great compositions covering wide surfaces. At night the decorative scheme is one of a fixed background into which the same motif, the stars, is repeated in a symmetrical arrangement.

In art the practice has been similarly divided between the spreading of masses of color in scenic compositions containing one or many figures, and the arranging of a repeated motif, or of several motifs, in a balanced and more or less geometrical manner.

The height of the ceiling, the character of its area (flat or arched), and the architectural and structural interruptions that divide, or cut up, its surface must all be considered before one or the other method is employed. A square or rectangular flat surface will lend itself better to a ceiling of the repeated pattern style, while a vaulted ceiling, cut up by intersecting arches, will demand a decoration in which the soffits, spandrels, architraves and demi-lunes will all receive a distinct design.

By reason of the Detroit Public Library building providing ceilings both broken and unbroken, it has been possible to utilize both genres of decoration.

The most imposing and most important of these

The Groins of the Vault Are Ornamented With Fine Interlace Decoration

Corner in East Corridor

plafonds is the barrel vault spanning the double stairway and bisecting the building along its entire width. This is divided into five main sections by four wide bands of ornament in relief. These bands cross the vault from east to west and are subdivided into oblong panels separated from each other by hexagonal or round cartouches which contain book marks, printers' devices, emblems, escutcheons and various other ornaments of a bibliographic character.

There are four long oblong panels in each of the bands and each panel contains a seated figure symbolizing some form of art or letters. The figures in the first band typify Epic Poetry, Didactic Poetry, Elegiac Poetry and Lyric Poetry. In the next band are pictured Ancient History, Modern History, Conservatism and Invention. The next portrays Romance, Tradition, Biography and Fame. The fourth band, that at the northerly end, contains presentments of Biology, Science, Cartography and Geology.

The interlace ornament which forms part of the four dividing bands and follows the intersection of the pendentives is in relief and gilded over a background of color. Of the five main sections into which the vault is divided, the three middle sections are subdivided as follows: An ornamental

octagon modeled in relief and edged with gold forms the center of the group. A Greek fret, in relief and gilded over a blue ground, surrounds this panel and also serves as border to rectangular panels, flanked by cameo like cartouches of a Pompeian flavor. In the panels of the center section are inscriptions—LETTERS, ARTS, HISTORY, SCIENCE.

In the panels of the two lateral sections are seals respectively of the United States, State of Michigan, University of Michigan and City of Detroit.

The main section to the south, the first of the five, contains a large rectangular panel bearing an inscription and smaller panels on either side with the names of distinguished authors. In the south section the names are Whitman, Emerson, Virgil and Homer, while those in the corresponding section at the north end are Poe, Lowell, Hugo and Milton.

The inscription in the SOUTH panel reads "Consider what Nation it is whereof ye are: a nation not slow and dull, but of a quick, ingenious and piercing spirit, acute to invent, subtle and sinewy to discourse, not beyond the reach of any point the highest that human capacity can soar to."

In the panel of the NORTH section is inscribed "Reading, trying all things, assenting to the force

Pencil Sketches for Ceiling Main Stairs

Preliminary Sketches of Detail, Ceiling Main Stairs

of reason and convincement, what wants there to such a towardly and pregnant soil but wise and faithful laborers to make a knowing people, a nation of prophets, of sages and of worthies."

There are six penetrations in the vault, three on either side. Four of them are filled with modeled ornament, a vase in the center typifying the fountain of Pirene flanked by the winged horse, Pegasus. The central penetrations contain each a single figure "Inspiration" seated on an eagle, and "Genius" on a winged horse.

The dominant color tone is a soft moonlight blue, while the ornamental moldings are a deep antique gold, relieved here and there with gray.

The corridor, which immediately adjoins the barrel vault, and which the eye takes in with the vault itself from the stairs, has naturally had to be treated in the same spirit as the vault and in a manner to harmonize with it. It is made up of seven sections separated by flat arches. Each section is made up of four curved triangular panels formed by the intersecting vaults, the groins of which are ornamented with the same interlace used in the decorations of the barrel vault.

In the central section the four panels are ornamented with architectural frames in stucco relief, containing figures representing Architecture,

Painting, Sculpture and Music. The sections at the North and South ends are treated in the same manner, each with four figures seated. These represent Tragedy, Comedy, Harmony, Symphony, Justice, Government, Equality, and Fraternity.

The other four sections in the corridor show two standing figures, each in architectural frames. These typify Astronomy, Mathematics, Chemistry, Geography, Poetry, History, Dialectics, Rhetoric. The ornamentation is closely related in motif with that used in the pendentives in the barrel vault.

In the decoration of the ceiling of the Main Delivery Room, where a vast flat surface is available, the second manner, the symmetrical arrangement of a repeated decoration upon a fixed background, has been adopted. The room is one of noble proportions, seventy-five feet square with a ceiling thirty-five feet high, and permits the use of a pattern of coffers and rosettes of large dimensions in deep relief.

The constructional beams which form the octagonal coffers are painted a light neutral gray, with a pale green background for the modeled plaster ornament on the soffits of the beams. At the intersection of the beams are four gilded rosettes which

PRELIMINARY WASH DRAWING FOR CEILING DECORATION

Esquisse for Emblematical Ceiling Decoration

surround a simple larger rosette of pale blue. The ornamental moldings of the coffers are richly gilded and accented with deep reds, blues and violets. The center of each coffer is filled with a large gold rosette in high relief against a background of dark blue.

This ceiling, resting above a large band of blue, carrying an inscription in gold letters, contrasts agreeably with the sober limestone walls which have been given a tooled surface in order to produce the desired color tone. In any other surrounding it would have seemed too vivid, too blatant in coloring, but here it is as a glimpse of the sun shining through a break in the clouds.

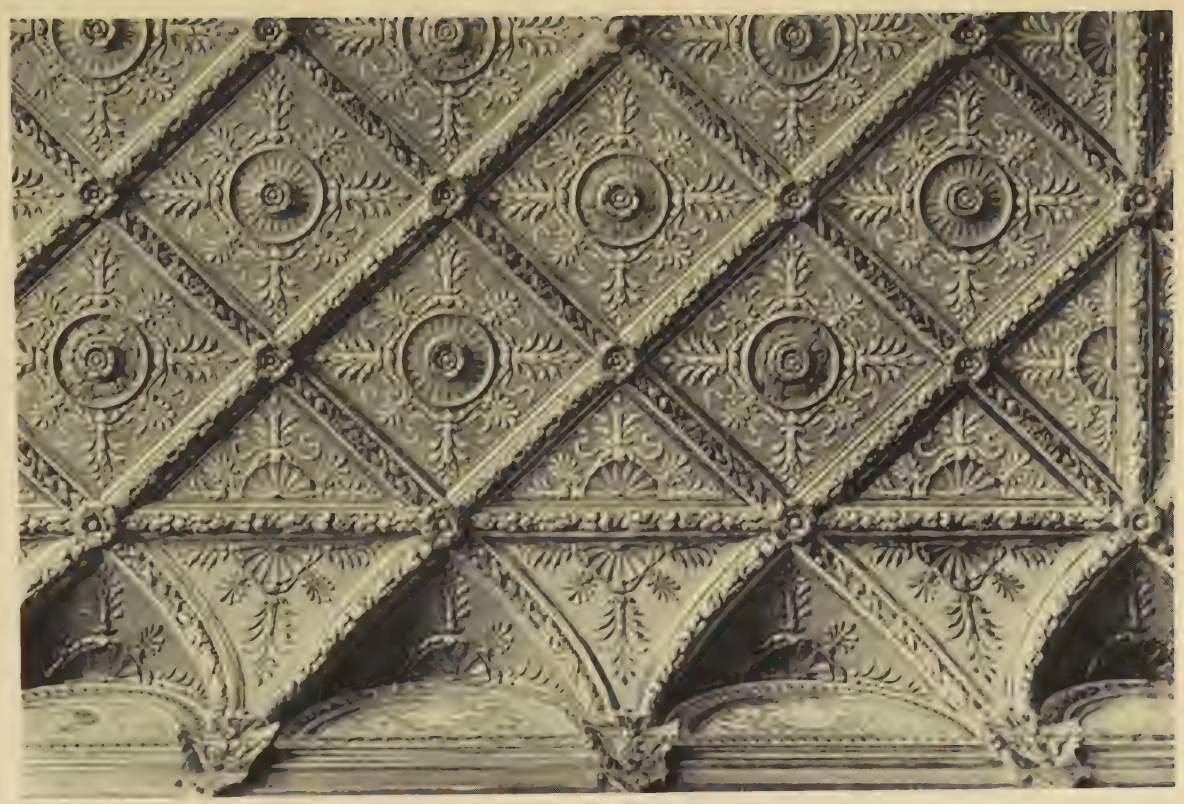
The other decorated ceilings of the library are less brilliant and not quite as magnificent and ornate, but in all of them color has been used to fine advantage in adding beauty to form.

The ceiling of the Open Shelf Room is a pattern of hexagons and small triangles made by the meanderings of an intersecting round molding. The walls above the shelves are a rich yellow, without any ornamentation. The center of the hexagons and triangles is decorated with rosettes and a flat band runs on either side of the round molding. The molding and the rosettes are gilded, the flat bands are gray. The background of the rosettes

in the hexagons is gray, while the background of those in the triangles is red. The general tone is yellow-gray.

The Social Science Room also has yellow walls, but of a deeper shade. The frieze around the room is a series of semicircular drums separated by triangular pendentives which carry the ceiling down to the wall. The ceiling itself is divided into oblong squares by a bold four-inch round molding of floral detail, with rosettes at the intersections. Each square contains a large rosette, of which there are several designs. The four squares in the center of the ceiling are omitted and their place is filled with a large circle framing a picture symbolizing Wisdom counseling Statesmanship. The frieze is made up of arabesques and circles containing portrait heads. The color scheme of the ceiling is blue, gold and light gray, the gold being used on the moldings and rosettes and the gray on the other ornaments.

The Fine Arts Room, which runs parallel with the façade of the libary, has a very handsome ceiling of simple design, somewhat after the manner of the ceiling of the Church of Santa Maria Maggiore in Rome. The walls finish with a frieze which is made into panels by pairs of brackets equally spaced about the room. These panels are filled with deli-



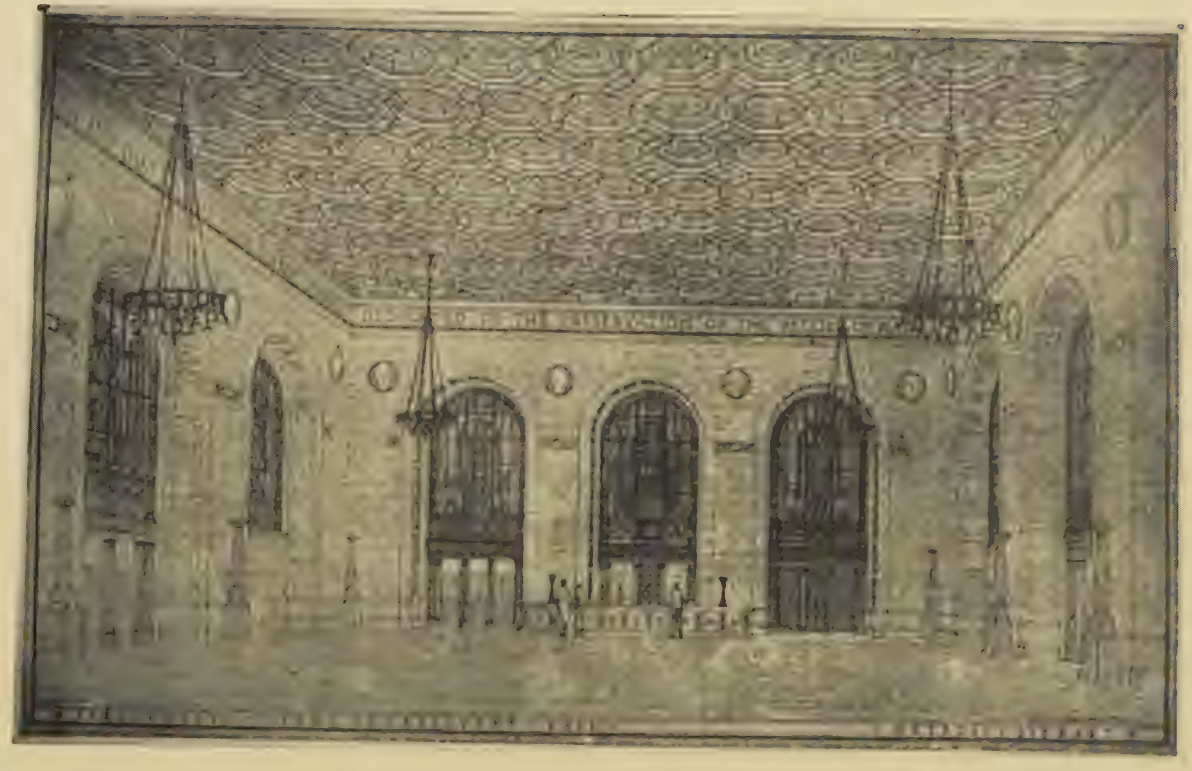
Detail of Ceiling of Social Science Room

Triangular Pendentives Carry the Ceiling Down to the Wall

Fine Arts Room in Pale Yellow and Gray

Ceiling of Open Shelf Room

Music and Drama Room Ceiling in Low Relief



Architect's Drawing for Delivery Room

cate arabesques in different designs suggesting Pompeian grotesques. The soffits of the beams which divide the ceiling into squares have ornament in relief and the center of the squares contains rosettes. No metallic color has been used in the decoration of this room. The walls are a soft mulberry; pale yellow and gray-blue are used in the frieze, and brighter blues and greens color the beams. The ornamental rosettes and moldings are finished in pale yellow and gray.

The ceiling of the Music and Drama Room is reminiscent in its general design of the Ducal Palace in Mantua. The walls are blue and the very elaborate plaster ceiling is done in dull gray relieved with gold, used with studied restraint, in connection with subdued shades of reds, greens and blues. The rosettes in the center of the octagonal panels are blue and the masks and lyres in the ornamentation are gilded.

The Reference Room does not require special mention, being a different chromatic treatment of the Open Shelf Room, but the vestibule and entrance hall deserve a brief description. Here the tone of the Tennessee marble, which is soft gray with a suggestion of pink, has influenced the choice of the colors used above the walls. The ceiling is divided longitudinally into three main sections by

two marble entablatures supported by Doric columns. These main sections are subdivided into octagonal and square panels by flat beams ornamented with a Greek fret broken at intervals by rosettes. The octagons alternate with squares and contain figures in low relief, gray-white on a red ground, which have been treated like cameos. The squares contain circles in which is set an ornamental composition relieved with gold and detaching itself against a blue background. Gold is also used with gray on the ornamental moldings and white has been introduced in some of the small square panels. The general effect is rich and quiet.

The succession of ceilings within the Detroit Public Library constitute a combination of form and color that reflect the spirit of Giovanni da Undine and of the Roman, Florentine and Venetian schools of the sixteenth century, when the practice of combining relief surfaces produced by stucco, with flat surfaces ornamented with a painted composition, came into favor. At the hands of masters, like Rafaelle and Michelangelo, to say nothing of artists like Peruzzi, Poccetti, Vasari, and Battista Franco, it attained a development that spread to every civilized nation in Europe and that filled Italy with soffitti that must compel the admiration of generations.

There had been decorated ceilings before the sixteenth century, as the remains of the Pantheon of Agrippa will attest, but they had consisted of applied decoration more or less limited by the structural and architectural divisions of the ceilings, the apparent beams used for support. These beamed ceilings, elaborately painted like missal illuminations and standing out against a background of carved plaster work called Yeseria, are one of the glories of Spain of the fifteenth century.

The Infantado Palace at Guadalajara, the Town Hall in Seville, the Casa de Mesa in Toledo, the Aljaferia in Zaragoza, the monastery of Santo Domingo De Silos in Castile, are only a few of the palaces and religious edifices of Spain containing examples of this type of ceiling, known as "artesonado." The process of painting these beams is very primitive. The surface of the wood receives a preliminary coat of size and thin yeso, or plaster wash, after which the color is applied flat, in tempera, with no modeling. The effect, however, is very sumptuous.

The Sala Capitular of the Toledo Cathedral contains a ceiling of this character, finished in 1508. The ceiling is flat, with a central panel divided into thirty-two coffers, so arranged as to form a cross of St. Andrew in the soffit. The

dominating note is gold. The painted decoration is confined to the soffits of the coffers and the beam panels. The background of the coffers alternate between a deep peacock green in one coffer and a dark burnished copper in the adjacent space. This same alternation of background is carried out in the beam panels with the pattern always in gold.

When Michelangelo divided the plafond of the Sistine Chapel in compartments containing painted compositions having no relation whatever with the architectural or structural features of the ceiling, he established the precedent that the ceiling could be an independent decoration and the beams ceased to be of importance in fixing the design of this decoration. The relief, heretofore produced by the cedar rafters, was produced with stucco and modeled plaster. This medium being infinitely more plastic than wood, it follows that the effects obtained were far in advance of those secured by the older method. The wonderful grotesques of the Loggia of the Vatican, designed by Rafaelle and executed in slightly raised stucco, could never have been fashioned had wood been the basis of the composition. One has but to view the wonderful ceilings of the Library in the Ducal Palace of San Marco in Venice to realize

the limitless possibilities of stucco relief and color combined.

The Golden Staircase vaulted ceiling, in particular, is like a rainbow imprisoned in gossamer goldsmith and filigree work. This shimmering mass of gold and soft tints, which covers every inch of the stucco moldings, consists of a series of square and octagonal panels joined by boldly sculptured bands, each compartment filled with painted decoration from the brush of Battista Franco.

The architect of the Detroit Public Library and the decorative artists whom he entrusted with the duty of putting his ideas into color and form, have not produced a work as dazzling as the ceiling of San Marco, but one feels that they could have done so had the edifice to be adorned warranted as brilliant an outburst of gold and rainbow tints. They have used restraint because a certain reserve was in good taste in a building which is neither a theater nor a ballroom, but one given over to silence and reposeful reading.

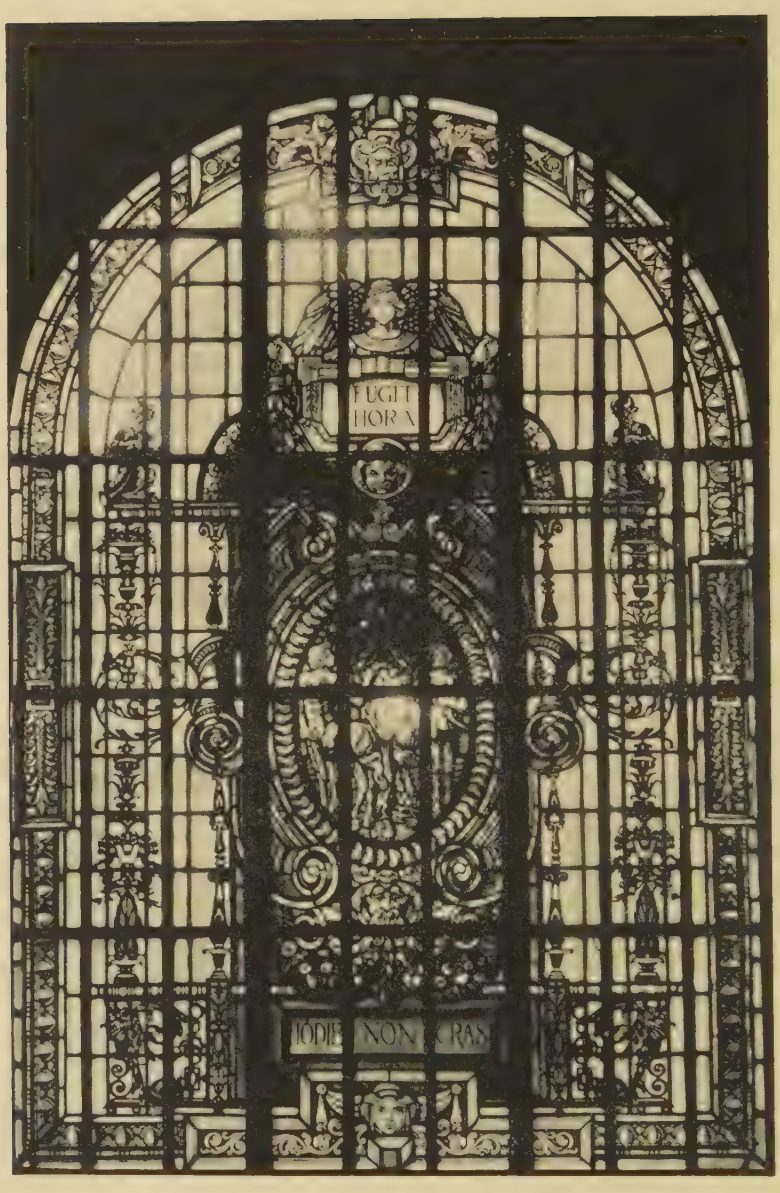
THE WINDOWS

THE lack of a generic word to designate translucent decorations made of colored glass in fragments held together by lead is so apparent that one may be permitted to coin a new descriptive noun, simpler and more accurate than the complicated "stained-glass window." By calling all bays admitting light into buildings through a mosaic of colored glass sutured by lead, "vitrals," we escape the criticism that all "stained glass" is not stained, and we gain a short and perfectly intelligible word derived from the French "vitrail" and which can be applied unequivocally to painted glass and glass colored in the crucible and designated "pot metal."

The vitrals of the Detroit Public Library are "quarry" windows, by which is meant that they are made of painted glass cut into squares after the Italian Renaissance manner. They are notable for the sobriety of color and the delicacy of line, and having been designed for a purpose, they achieve that purpose, which is the admission of white light into the edifice.

A much more brilliant effect could have been

Corner of the Entrance Hall



Key Window, Center of West Wall

obtained with pictorial windows, filled with figures and resplendent with color, but such windows would have been in violent contrast with the restful gray walls and in addition would have cast a multi-colored light in places where anything but untinted daylight would have been a detriment and an offense.

In harmony with the architecture of the rest of the building, the design of the windows is inspired by Italian Renaissance precedents, and some of the decorative arabesques used are an adaptation of decorative motifs treated in bronze, marble and mosaic in other parts of the edifice.

The most pretentious and most ornate of these vitrals fills the center opening of the three bays which admit light into the Delivery Room from the West, North and South walls. The dominant window in the West wall is immediately above the delivery desk and the finely chiseled grilles and clock, a delicate tracery of bronze that runs the width of all the arches at a height of ten feet.

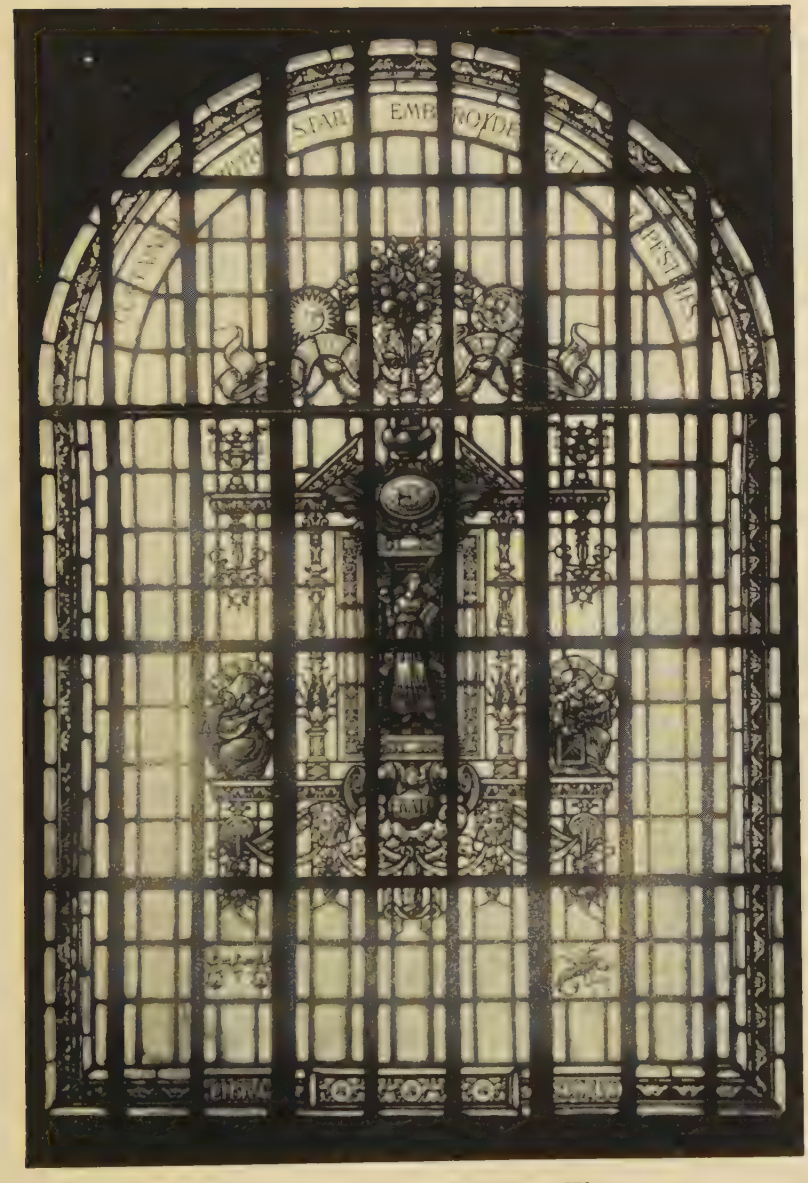
It consists of a central cartouche containing the imprimatur of a forgotten Italian printer of the sixteenth century and of a border made of the classical egg and dart molding, broken by four small panels disposed top and bottom and at either side.

The central decoration is set in a frame of

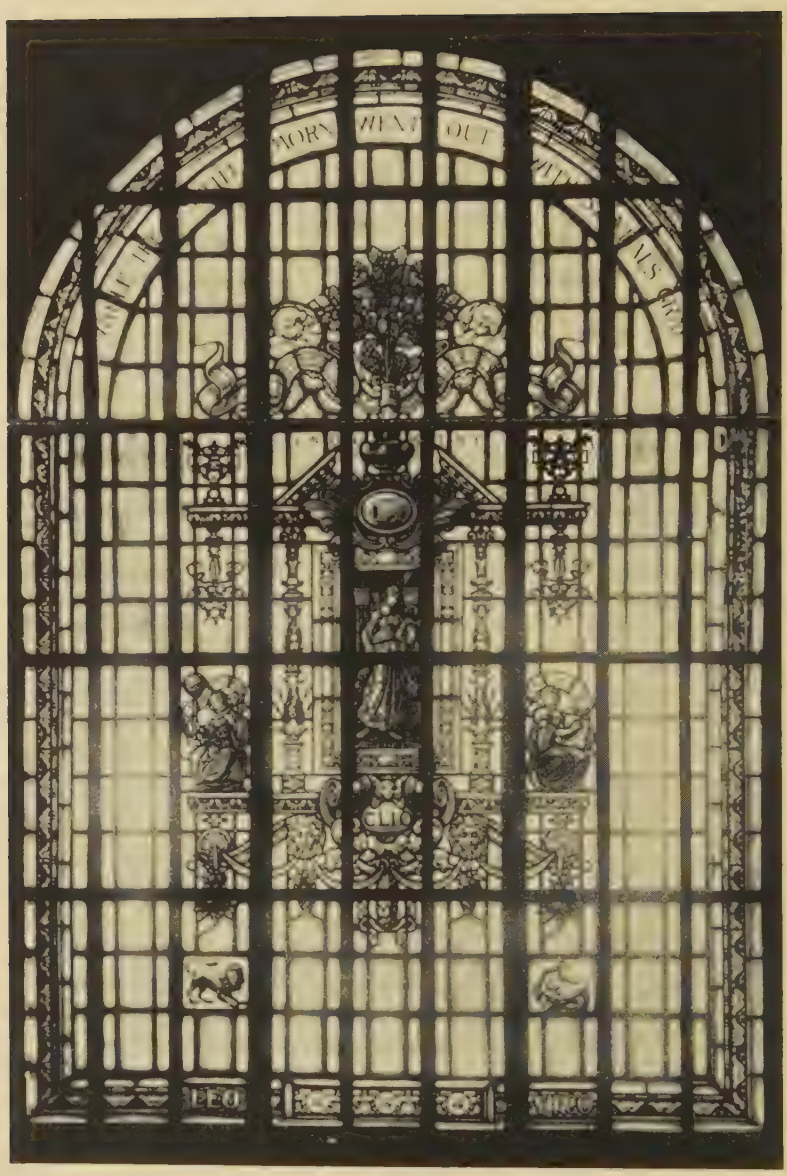
sculptural effect, with a base and top piece brought together by arabesques and uprights suggesting the exquisitely wrought iron grilles, or rejas, of the Spanish cathedrals. It portrays two centaurs going in opposite directions and stopped on either side of the tree of Knowledge to take counsel. A framed panel at the top of the decoration contains the Latin inscription "Fugit Hora," The Hour Flies, while a smaller panel at the base contains the admonition "Hodie Non Cras," To-day not To-morrow.

A distinctive feature of this and other windows in the Library is that a design is worked in the leads which amalgamate the fragments of painted glass into an uninterrupted surface. Because of the small area to decorate, this design is of necessity largely structural, conforming in its perpendicular and horizontal lines with the mullions of the window, but here and there small arabesques are introduced solely to add to the ornamental value. The general color scheme of the vitral is light silver gray, with here and there a touch of bright color.

On either side, the centaur window is flanked with vitrals in which the field is covered less solidly, thereby providing a pleasing contrast and at the same time admitting an adequate volume of light. While the designs in both of these are different in detail they are very similar in outline. In both



Left Lateral Window, West Wall



Right Lateral Window, West Wall

cases there is a central vignette in a long rectangular frame with handsome cartouches top and bottom and with two seated figures allegorical in character disposed right and left on the architectural plinth which supports the entire decoration. An ornamental scroll with foliage and fruit and astronomical symbols serves as a top piece while the signs of the Zodiac fill two squares right and left in the lower part of the composition.

This is framed within a classical border of sculptural effect and at the top of both arches a legend is strung out in bold lettering occupying almost the entire curve. Within the lower frame are two inscriptions identifying the signs of the Zodiac immediately above them.

The central vignette in the window to the right of the central vitral contains the presentation of the muse Clio. The seated figures which flank it are emblematic of astronomy and arithmetic, while the figures of the Zodiac introduced are Leo and Virgo. The inscription on the scroll in the upper decoration is "Semper Immota," and the legend which circles the arch is "While the still morn went out with sandals gray," from Milton.

The window at the left contains the presentment of the muse Erato, who is flanked by the figures of Music and Geometry, while the signs of the Zodiac

are Libra and Scorpio. The inscription on the scroll reads "Semper Fidelis," while the legend lettered in the top of the arch is "Curtained with star-embroidered tapestries" from Shelley.

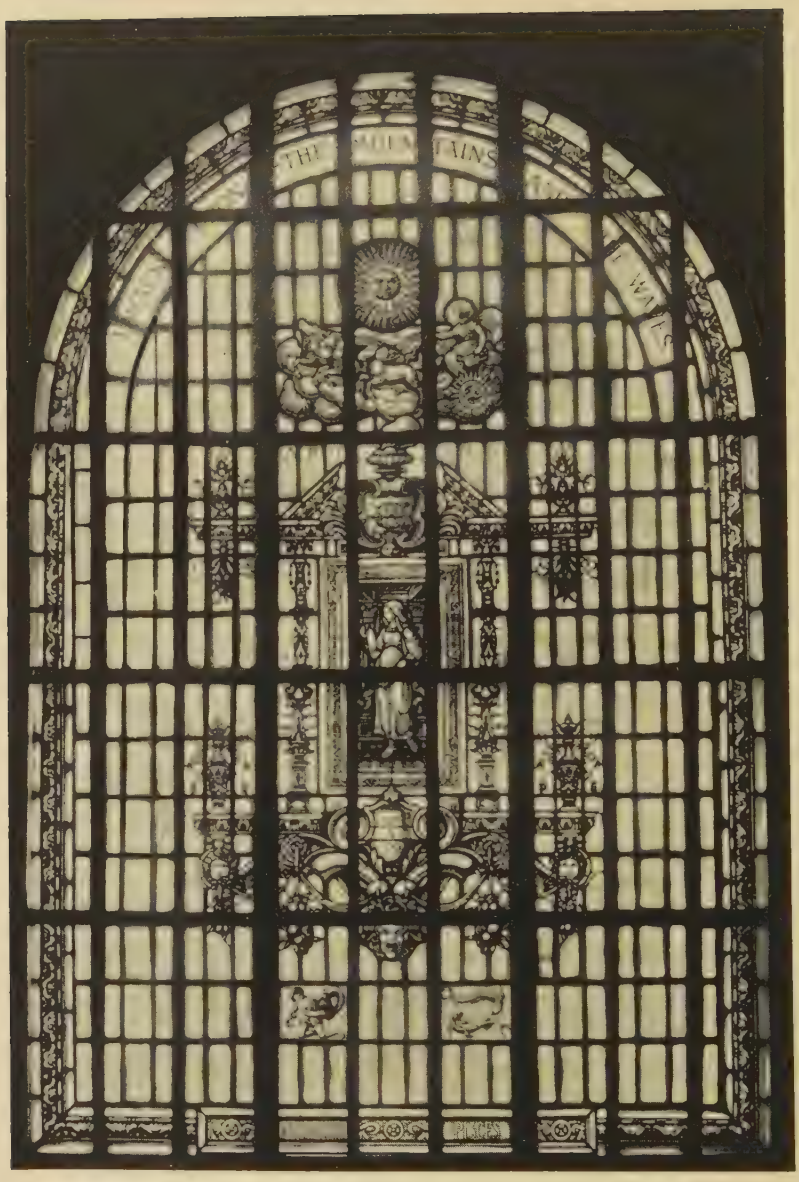
Corresponding to the centaur window on the North wall over the door leading to the Open Shelf and Music Room is an ornate vitral emblematic of Art. The central cartouche is framed in an oval arabesque very delicately limned and represents an old wood-cut with medieval personages illustrating the verse:

> "O truant Muse, what shall be thy amends
> For thy neglect of Truth in beauty dyed?"

The same architectural treatment of border is to be noted as appears in the centaur window and at the same time no single detail is similar. The masses are grouped to occupy about the same surface and every decorative element introduced is of the same Italian Renaissance period so that a perfect balance is maintained with the centaur window and the other central window on the South wall.

The central windows are homogeneous in character and treatment and there is a general symmetry among them all and a pleasant harmony of line and color. There is a similarity of decorative attributes employed and yet each of the three variants

Center Window, North Wall



Right Lateral Window, North Wall

is distinctive and conveys its own message irrespective of the others.

Besides the floral arabesques and the conventional foliage of the uprights supporting the lintel, the North window contains two tablets, the top one framing the word Art and the bottom one the quotation "Quo Lux Ducit." Below the cartouche is a presentation of musical notes as pictured in the old psalmsters.

The vitrals flanking this central piece are also emblematic of the muses and, like those flanking the centaur window, admit more light than the composition in the center. The right window is devoted to Apollo, who is seen in the upper part of the composition driving the horses of the Sun through the clouds. The figures of the Zodiac represented are those of Aquarius and Pisces. The inscription around the top arch is, "I walk upon the mountains and the waves," by Shelley.

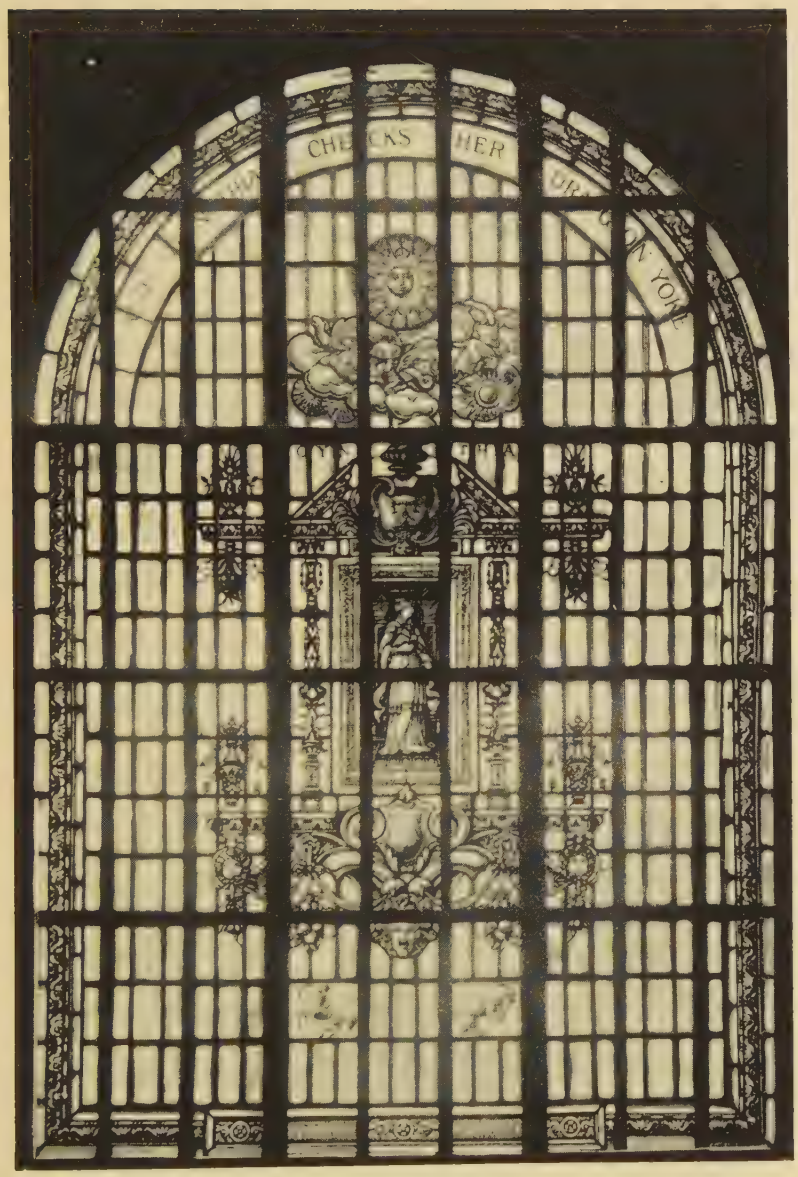
The pendant window to this on the left is devoted to Thalia who occupies the central vignette held up and crowned as in the other side windows by an architectural design of lintel and plinth with columnar uprights. The signs of the Zodiac here are Sagittarius and Capricornus and the inscription at the top is, "And Cynthia checks her dragon yoke," by Milton.

In the South wall the central window which is over the entrance to the Open Shelf Reference Room is yet another treatment of the centaur window with a central oval cartouche and an architectural border with the main field filled with delicate tracery reminiscent of old wrought-iron. Decorative attributes of the Renaissance period used in the side pilasters, the lintel and base include peacocks, griffons and sphinxes while the various tablets are framed in architectural motifs. The central composition is also a wood-cut effect illustrating the verse:

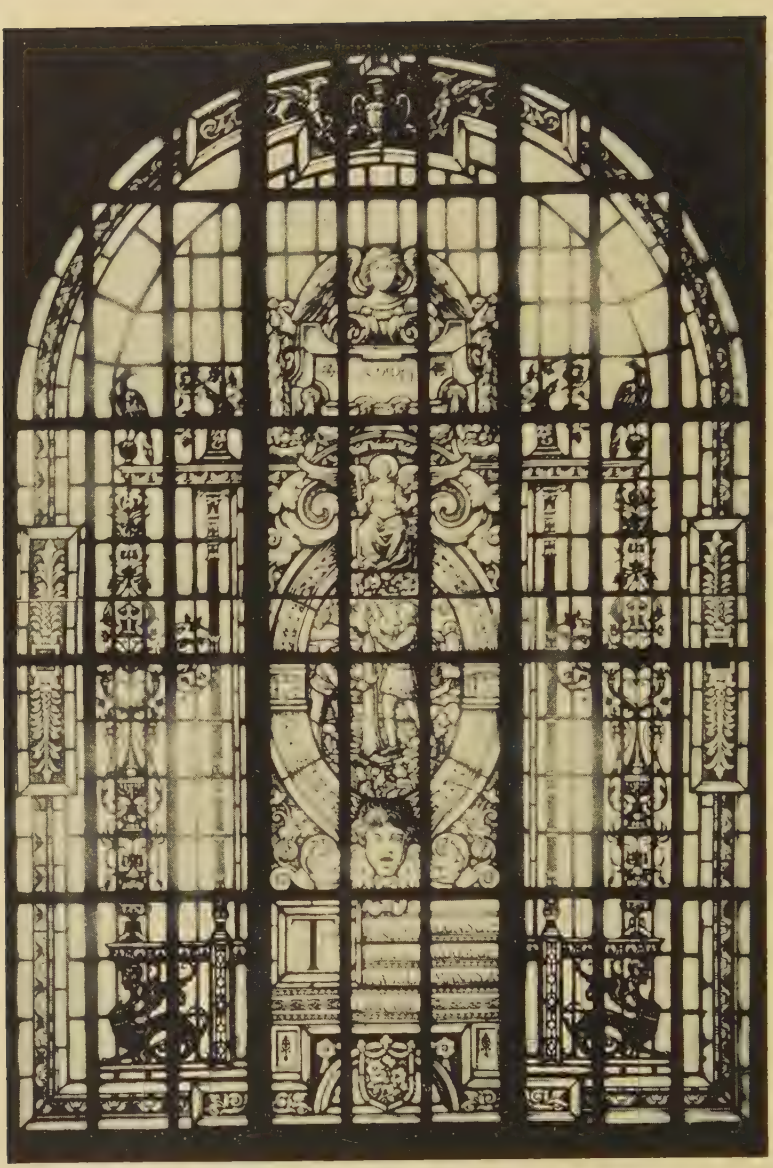
> "With them the seed of wisdom did I sow,
> And with my own hand sought to make it grow"

The upper cartouche contains the inscription "Aspiro," while in the lower is lettered "The great consulting room of a wise man is a library."

The lateral vitrals to this central composition are, as the side windows of the other two walls, lighter in ornament than the central bay. The one on the right is in glorification of Uterpe, who like the muses in the other compositions is framed in a central vignette resting on a base and topped by an architectural lintel. In the upper field Venus is pictured seated in a chariot drawn by doves. The signs of the Zodiac are Gemini and Cancer while the



Left Lateral Window, North Wall



Center Window, South Wall

Right Lateral Window, South Wall

Left Lateral Window, South Wall

inscription vaulting the top is, "Make me thy Lyre even as the forest is," by Shelley.

The window on the other side is devoted to Melpomene, the Muse of Tragedy. Here the signs of the Zodiac are Aries and Taurus. The inscription at the top is, "Let gorgeous tragedy in sceptred pall come sweeping by," by Milton. Below this Mars, in a chariot drawn by the dogs of war, is seen flying through the clouds.

The ensemble of these nine windows is in tune with the stateliness of the Delivery Room where the dominant note is one of majesty and repose. To have made them more brilliant in color or more ornate in design would have destroyed the harmony of the room.

Elsewhere in the building, however, the opportunity existed for the setting in of rich windows permitting the use of painted glass of a livelier hue. This was in the walls marking the ends of the stair-well over which arches a barrel vault emblazoned with arabesques of gorgeous coloring.

The vitrals which admit light into this stair-well are inspired from the windows in the Audito del Colloquio in Florence, the cartons for which were painted by Giovanni da Udine. A rich border in which are set six pictured panels frames the entire wall opening and sets off a magnificent cartouche

of architectural design set in the upper center of the window.

The North window portrays Study, Art, Music and Painting in the side panels and contains the inscription "Conata Perficio" in the panel at the bottom.

The South window is identical as to border, but differs in the symbolical inserts which in this instance typify Meditation, Sculpture, Music and Geography. The inscription "Labore Vinces" occupies the bottom panel.

In both windows, the central cartouche is an oval set in an ornamental frame, in one case supported by two female figures and in the other surmounted by two amorini. Garlands of laurel depend from the composition which is sculptural in effect and highly ornamental. The lower half of the windows is of unpainted, or rather, very lightly tinted glass, set in very heavy leads arranged in rectangles and squares.

North Window in Stairwell

South Window Opening on Stairwell

THE ART OF PAINTED GLASS

THE authorities are divided as to the origins of Painted Glass. We find glass is mentioned by King Solomon and by Aristophanes, and Pliny tell us that Sidon was famed for its glassware. We also know that long before Solomon, Aristophanes or Pliny, the Egyptians had mastered the art of glass making.

There is no doubt as to its antiquity. Its use in windows, however, is of comparatively recent date. For a great many centuries glass was such a precious material that the idea of using it in windows did not occur to anyone. In those days, windows, were filled with small panes of mica, or oiled parchment, or paper.

When in the latter part of the third century we note the appearance of glass in church windows, we find that this glass is colored and limited in area. Because of the restricted dimensions of the glass available, it was obviously necessary in order to fill a wide wall opening in a cathedral, or basilica, to make one large surface out of many small fragments assembled together. Glass was then made in the mass and was a colored molten substance spread

flat and not blown. As late as the eighteenth century, no white glass was available for the framing of engravings larger than eighteen inches by fourteen or sixteen. If the engraving or pastel was of greater area, it had to be protected by piecing the glass, or shaving the knob, or boudine, which formed the center of all glass plates of those days. These plates were obtained by giving to the pot glass in fusion a rapid rotary motion that yielded a section or flat glass circular in shape and graduating in thickness from the center to the outer edge. Thus, with colored glass, the center portion would be much darker in color than the outer edge of the circumference owing to the greater thickness. This central protuberance is called "boudine," or "spun rondel" and as late as the beginning of the nineteenth century the windows of the homes of the middle class, those of the public inns, in fact those of the great majority of houses, were glazed with small panes having these rondels in the center.

From the third century to the tenth, the only process known, in filling the wall openings of Cathedrals and palaces with glass, was the assembling of small fragments into a mosaic, each fragment being produced and colored in the pot when in a molten state. This glass is called pot glass and so brilliant is the colored effect produced

that memory of it has been brought down to us by the rapturous description of the windows of Saint Sophia by the Greek poet, Paul the Silentiary.

Writing in the fifth century, Paul speaks of the three windows of the dome of the famous basilica of Justinian, "set in five sections each made up of thousands of small panes of the most dazzling color and assuming with the coming of day a brilliancy as of gems."

Latin writers of this same period have left written descriptions of the windows in the cathedrals of Ravenna, Bordeaux, Paris; the Church of St. Peter and St. Paul in Nantes, that of St. Martin of Tours, and others, but unfortunately no actual window of that day has been preserved.

For nearly seven hundred years windows continued to be made entirely of glass colored in the mass and assembled in the form of a transparent mosaic. A peintre vitrier of the eighteenth century, Pierre le Viel, who replaced some of this early glass in the Paris Cathedral, finds tracings in black on red glass in some windows of the tenth century, but not until the beginning of the eleventh have we authentic reports of painted glass as now understood, that is of white glass painted over with color and fused in kilns.

The oldest vitrals in existence, those of Terg-

ernsee Abbey, in Bavaria, date back to the middle of the eleventh century. Like all art of that period, the drawing is exceedingly crude, but the color effect is brilliant. Even in windows of the twelfth century, of which good examples remain in the Angers cathedral and the Abbey of St. Denis near Paris, there is a crudeness in the drawing which mars the general effect and the leads frequently startle the eye by their appearance in unexpected parts of the composition.

The windows of that period, as those no longer in existence of the early Middle Ages, are an expression of mysticism. They were for the eyes of Christians who could not read and were sermons in glass to which the rays of the slanting sun lent a powerful value of evocation. Many a simple soul was lifted to a state of ecstasy in the religious beholding of the gates of paradise opening within the bays of a dimly lighted cathedral in a sort of religious mirage.

The art of painted glass began by being a Christian art. At a time when darkness environed the world the church alone possessed a knowledge of the past and the arts were practiced only by monks. It was upon the initiative of their bishops that the Kings of France built and adorned the many wonderful churches and cathedrals of that period, some

of which took two hundred years in the making. The Church was the repository of what art tradition existed and it was the church that encouraged and developed fresco painting, mosaic and multicolored windows.

The windows of that day were a decoration, and not agencies for the admission of light. The light was not needed, only a religious penumbra, an atmosphere propitious to prayer and conducive to emotion. In fact, we owe the disappearance of these earlier windows, rich in color but obstructive of light, to the development of the knowledge of reading and the gradual use of prayer books. When it became necessary to have enough light in church whereby to read, whole sections of windows were removed, sometimes entire windows, which were replaced with white glass.

Before going into a description of the growth of painted glass from the twelfth century down to the present time, it may be well to say something about the technique of the art.

The processes have not changed materially in five centuries. In fact, science has simplified many of these and increased the number of shades available. The leads, or calmes, are now grooved by machinery, and the glass which once had to be cut with a red hot iron is now much easier pieced out

with a diamond. While the art of painted glass did suffer an almost total eclipse during the eighteenth century and part of the nineteenth, not one of its secrets was permanently lost.

As in the twelfth century, the materials used in glass making are silicates, alkalies and earths. A fine white sand with an admixture of potash and soda is brought to a melting point and metallic oxides provide the coloring element. Red is produced by copper or gold, yellow by silver, iron or antimony, blue by cobalt, green by copper, etc.

There is a legend to the effect that the process by which yellow glass is obtained was discovered accidentally in the fifteenth century by a Dominican monk, Jacques l'Allemand, of Bologna, who dropped a silver button from one of the sleeves of his cassock into the pot metal which he had just drawn from the kiln. The story is at least plausible.

The varieties of glass used in the present day vitrals are known as Antique which comes in various kinds, such as Pot Metal, Flash, Streaky, English Norman Slab and Priors Early English. Very little of Norman Slab or Priors glass is used. What is designated as Pot Metal is glass colored in the pot when in a molten state. In this glass, the color pervades the whole of a sheet equally. The only difference in shade arises from a difference in thick-

ness. The thick part of Pot Metal will have a deeper color than the part that is thinner.

Flash glass is white glass coated with a film of colored glass. Its origin is due to the necessity of securing a ruby glass that would be intense in color and yet retain its transparency. In order to do this the glass blower has to dip his rod first into melted white glass and then into ruby. When this is blown, a thick sheet of white glass is covered by a very thin superficial layer of ruby glass. Flash glass comes in ruby, blue, green, yellow, and purple. There is also a flash pink made from gold which is very beautiful.

Streaky glass is made by dipping the blow pipe into pots of differently colored metal and working the small quantities thus collected into one mass. When this is blown, the various colors are spread out in streaks each distinct in hue.

Norman Slab is produced by blowing a bubble of glass into a box-shaped mold. This mass is then split into slabs of various sizes with great thickness in the middle and relative thinness on the edges. Where a deep shade of color is desired they are of great use.

The present-day leads are cast in an iron mold into strips about eighteen inches long. These strips are then passed through a mill or vise having regulated

wheels and cheeks of hardened steel. Each casting is squeezed through the mill under great pressure until it finally emerges in the form of a calme, or strip, about five feet long and grooved on two sides. By regulating the aperture of the vise, calmes of various widths can be produced, from an eighth of an inch to an inch and a half.

Another important element in the construction of vitrals is iron. Small sections of painted glass soldered together with a flexible lead would be unable to withstand any considerable pressure of wind without the support of iron work. In ancient cathedrals and edifices with large window openings this iron work was disposed in a geometrical arrangement following as much as possible the design of the painted window. In mullions and narrow windows this treatment is not necessary and the iron work, as a rule, takes the form of simple horizontal bars with the occasional additions of an upright stanchion.

The making of the modern window is the work of many hands. Having obtained an accurate scale of the opening to be filled, the artist proceeds to make a colored sketch reduced in proportion to a scale of about one inch to the foot. After this has been produced he must make a full size detail drawing in charcoal with all the leads indicated clearly.

From this cartoon a working drawing is then made showing each separate piece of glass. The working drawing is then put into the hands of the cutter who makes patterns of paper of each piece of glass to be cut. After these patterns are made, they are stuck on a glass easel and the work of sketching and cutting begins. This is a delicate operation as the cutter must match the colors of the glass to correspond with the artist's colored sketch and many changes are necessary before the exact shade is found.

Following this operation, the artist goes over each separate piece of glass with a brush, carefully tracing the outline of the drawing. When this is done, the entire work is waxed upon a large sheet of plate glass, when further retouching by the artist must be done in order to bring the assembled fragments into a perfect whole. The glass is once more taken apart and fired in a kiln under a temperature of about 1400 degrees Fahrenheit. After the color has thus been fused permanently into the glass it is taken out of the kiln and the entire work is laid over the working drawing and glazed. The vitral is then ready to be set in position.

The art of composing a cartoon for execution in glass, like the art of making cartoons for mosaic or for tapestry, calls for a highly developed sense of

decoration, and the periods of decadence in vitrals, as in tapestry and mosaic, are those in which artists have tried to approximate in glass, or wool, or tesserae, effects produced on canvas with brush and pigment.

A tapestry that looks like a painting is not a good tapestry, any more than is a mosaic that tries not to look like a mosaic, a good mosaic, or a vitral that resembles a pastel, a good vitral. In all three, the outline is essential. The contrasts must be sharp, the drawing firmly accented, the composition simple.

The artist who chooses painted glass as his medium, must think quite as much of the leads as he does of the glass. These grooved veins that run through the design do not serve the purpose of merely soldering together separate fragments of colored glass. They fill the much more important office of giving sharpness to the contour of each fragment, and if the fragment is inconsequential and does not need this emphasis, the artist is at fault for supplying it.

Coming back to windows considered historically, we have seen that previous to the eleventh century what we know is hearsay, second-hand knowledge gathered from the writings of men who beheld the

glass of this earlier period, but unsupported by any specimen of window.

Undoubtedly, the most interesting collection of vitrals which has come down to us is the series contained in the Chartres Cathedral. These are variously of the thirteenth and fourteenth centuries and are generally considered most beautiful examples of the art—particularly the thirteenth century windows. There are one hundred and forty-seven large windows in which the effect produced by the skillful play on the three primary colors, red, blue and yellow, is nothing short of marvelous. When we consider the paucity of means at the disposal of the artists of that day compared with the palette available to the glass painter of the present generation, we are made very humble indeed. When we compare effects which are now produced with ease through the employment of a score or more of tints and shades obtainable through the advance made in the science of chemistry, we must admire these inspired creators of beauty, who although equipped with insufficient tools, yet managed to turn out so many masterpieces.

In those days, and until the passing of the monarchy in France, the art was in the keeping of impoverished nobles to whom certain dispensations were accorded in exchange for their engaging in

the work. They had the privilege of cutting all the timber necessary for the operating of their kilns in the royal forests. They were exempt from all taxes and could wear a sword. No apprentice could be employed unless he belonged to the family of the glassmaker or were of noble blood.

Although Chartres marks the apogee of the art of painted glass, there are superb vitrals of a subsequent date that continue through the fourteenth, fifteenth and sixteenth centuries the noble traditions of the artists of the Chartres Cathedral. Some remarkable fourteenth century windows are preserved in the Cathedrals of York, Strasburg, Beauvais, Orvieto and in Merton Chapel at Oxford.

The best examples of fifteenth century vitrals are those of the Evreux, York, Riom and Tours cathedrals, while the cathedrals of Rouen, Bourges, Metz, Lichfield, Winchester, Burgos, Seville, Toledo and Rheims are rich in vitrals of the sixteenth century.

Although the painted glass of the seventeenth century suffers by comparison with that of the preceding period, there can be found here and there some examples in which composition and coloring are of the highest artistic value. The vitrals of the Troyes library, of the Bourges cathedral, of the

Strasburg Library and of Oxford University are of this quality.

There has been painted glass of a sort produced since that period, but the French revolution and the Napoleonic wars caused a hiatus in the demand that was followed by a reduction in the supply. In 1840, when the French Government decided to restore the neglected Gothic cathedrals the demand was revived, and eventually the supply. A series of experiments were conducted at Sevres, notably by Broquiert, to rediscover the process of making pot metal glass and the modern art of painted windows dates from this renaissance.

To-day we have all the materials, all the tools that the masters of the Middle Ages had and a number of new colors and shades, to say nothing of improved machinery and processes; all that we need is their eye and hand and possibly a greater love.

Among the most famous vitrals which have survived to the present day, is the twelfth century window in the abbey of St. Denis, the Westminster of France, where a long line of French kings are buried. It is known as the Suger window, being one of a series ordered for this cathedral by Bishop Suger, who was Regent of France during the minority of Louis VII.

Scenes from the life of St. Paul and St. Maurice

are set in circular frames in perfect symmetrical arrangement on a mosaic background made of fragments of many colors arranged to form a pattern. This is one of the most famous windows in the world and its design and arrangement influenced the making of cartoons for church windows until far into the thirteenth century, as it might with advantage inspire painters of church windows to-day.

Equally famous is a vitral from Chartres Cathedral, Notre Dame de la Belle Verriére, from the first half of the thirteenth century. In this as in other thirteenth century windows is to be noted the minuteness of the fragments used. It is not infrequent for a face to be made of a number of pieces leaded together, and sometimes the iris of an eye is a piece of blue glass set in.

The thirteenth century windows in the Chartres Cathedral are noted for this multiplicity of fragments. One particular medallion, in which the death of the Virgin is pictured, shows a profusion of little figures. In the latter part of the century, while the backgrounds remain filled with a profusion of detail, the main figure attains monumental proportions, and we find as in the Chartres windows, in the upper story, figures of saints eighteen feet high dominating the composition. There are ninety-one of these splendid windows in the upper

part of the Cathedral and fifty-six in the lower story. It is remarkable that while the figure has grown in stature, it is still made of an enormous quantity of assembled fractions.

The same tendencies are present in the vitrals which have come down to us from this period and are preserved in the Strasburg Cathedral. Some of these windows were saved from the fire which destroyed the cathedral in 1298. The two in the south transept of the cathedral, representing St. Victor and St. Maurice, in armor, are of a distinct Byzantine flavor. The windows on the north side, on the lower level, known as the Germanic Kings, probably date from the beginning of the fourteenth century. In one of them, the vitral of King Henry, the border at the bottom and down the sides, in the lower panel, are of a later period, and not one-half as effective as the rest of the border. In all probability, this is a makeshift repair, which was not intended to be permanent but which has remained for six hundred years.

The Bourges Cathedral probably ranks next to Chartres in the wealth of painted glass which it contains. There are in this treasure-house no fewer than 183 vitrals, sub-divided into 5,592 panels. The one picturing St. Jacobus and that representing the life of St. Denis are distinctive of the twelfth

and fourteenth century epoch. The St. Jacobus window is older and primitive in design, but it illustrates forcibly the movement towards monumental effigies. The St. Denis window marks a departure from the single figure of heroic size and represents a gigantic effort, if only from the point of view of the multiplicity of the units to be assembled.

Windows dating from the fifteenth and sixteenth centuries are at first sight as complicated and impress one as very laborious mosaic, but if you study the leads you will find that the effect of complexity is due to the profusion of ornaments more than to the profusion of units. The drawing is much improved and the glass units larger, and while the effect is still splendid, it falls short of that produced by the thirteenth and fourteenth century specimens preserved in Chartres, Bourges, or Rheims cathedrals.

The nave windows of Rheims Cathedral, thirteenth century gems of the purest water, were almost completely destroyed by the unjustified vandalism of the Germans in 1915. They belonged to the series known as the Kings of France. Each window showed twin vitrals, with a King and the contemporary bishop of Rheims below him.

The circular medallions in the apex of the arch were notable for coloration and design. There had

been some patching done, no doubt to repair the damage done by the tornado of 1580, but it did not destroy the general effect. It is hard to say to what extent the damage done by the German bombardment can be repaired but it is to be feared that these windows will never again be gazed upon save only in the form of photos or colored slides.

During the fifteenth century the vitripictors make of their vitrals less of a mosaic and more of a painting. Much larger glass units are utilized and in the composition of the faces the leads are abandoned. They use their talents as draftsmen in portraying with the brush, not only facial expression, but perspective and background of landscape and architectural ornaments. Good examples from this period are to be found in the Rouen Cathedral.

The same improvement in drawing which marked the transition from the fourteenth to the fifteenth continued during the sixteenth century under the influence of the artists of the Renaissance. There are no longer any difficulties either of technique or of coloring. All glass may now be made either solid in color or simply as a film over white glass, which film may be removed by emery leaving a clear design upon a colored ground. A great many of the damask backgrounds of this period are made in this fashion, either by engraving with

an emery wheel, or by brushing over a stencil with a metal brush. The glass is now cut with a diamond and the leads are grooved by machinery.

It is interesting to note what prices collectors pay for painted glass of these early times. A fifteenth century window with three figures and a background of diamond shaped panes, known as quarries, recently sold for $25,000, while a thirteenth century fragment, a panel showing the head and shoulders of a saint, brought $87,500.

This fragment, originally in a monastery of the Isle-of-France, as the territory in Northern France around Paris was called, is from the thirteenth century, and after having been bought by Duveens for $70,000 was soon after sold for $100,000.

About the only notable vitrals of the seventeenth are those of the Church of John the Baptist in Gouda, Holland. From the middle of the seventeenth to the nineteenth, painted glass suffered an almost total eclipse, so much so that for a time it was generally believed that the art had been lost.

From the time of the restoration of the French cathedrals under the guidance of Viollet-le-Duc, however, there has been a re-birth and, now that the use of steel in large edifices makes possible window openings of larger and larger size, painted glass is again in demand.

There are modern windows in St. Patrick's Cathedral, New York, that are of a high order of merit and The La Farge windows in the Church of the Ascension have received high praise that is well deserved.

THE MOSAICS IN THE FRONTAL COLONNADE

WRITING in the sixteenth century, Vasari, who cannot be said not to have had the fullest opportunity for appraising the artistic value of mosaic, voices his surprise and regret that this most splendid and most permanent form of wall or ceiling ornament is neglected by both artists and governments. In his "Life of Titian" he makes this indictment of the artists and art patrons of his day: "In truth, it is deplorable that mosaic, that art which is equally precious by reason of its beauty as by reason of the permanency of its materials, should not be more cultivated by artists and encouraged by Princes."

The grievance of Vasari was no doubt justified, since mosaic had suffered a temporary eclipse from the fourteenth century until far into the sixteenth, and yet the Italy of Vasari's day was filled with pictorial mosaic dating back to the fourth century, all in perfect state of preservation.

Whether or not the influence of Vasari was felt by Pope Sixtus V, the truth remains that the pontiff in 1586 founded the mosaic factory of the

Vatican, which persists to this day, and set to work a large corps of mosaicists in the decoration of the walls and ceiling of St. Peter's.

The reproach of Vasari is as true to-day as it was then, and the example of Garnier, who sought to bring mosaic back into favor by utilizing it in the decoration of the Paris Opéra, has only been very spasmodically followed.

In France the only notable modern mosaics are those in the Cathedral at Marseilles, the cupola of the Pantheon in Paris, the frieze of the Church of the Madeleine, the façade of the Sèvres factory, and the frieze of the Grand Palais, designed and installed by Fournier in 1900.

There has been some attempt in Great Britain to utilize the splendid decorative value of mosaic, notably in St. Paul and Westminster Cathedral, and also in Rome, where the American church has a mosaic decoration designed by Burne-Jones, and on which William Morris and Alma-Tadema both worked; but, generally speaking, mosaic is an orphan child knocking hopefully at many doors but being welcomed at few.

In view of this general abandonment in all parts of the civilized world of one of the most effective forms of exterior adornment, it is perhaps a hopeful sign to see a great architect like Cass Gilbert

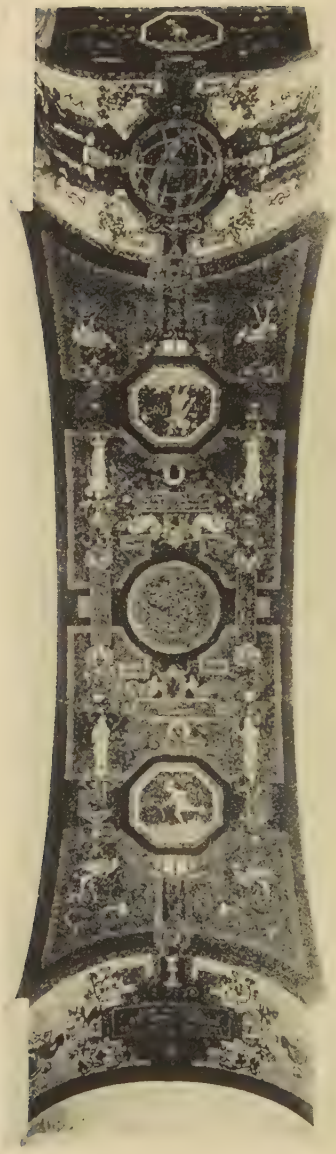
breaking a lance in its favor and so successfully proving his point, as he has done in the decoration of the Detroit Public Library.

Mr. Gilbert, having a façade consisting of seven arches to decorate in a building designed to endure perhaps for centuries, has wisely resorted to mosaic as the one medium wherewith to obtain not only permanency but also a high decorative effect requisite in an architectural ensemble consisting for the most part of white marble.

To the great advantage of the population of Detroit and those visitors who may come to view the Detroit Library, Mr. Gilbert was given such authority over the execution of this noble architectural pile that he is in every sense of the word the *maitre de l'oeuvre*, and as such has been in a position to dictate the nature and character of the decorations entering into the making of the finished library.

Too often the work of decorating our public buildings is an after-thought coming long after the completion of the edifice and made possible by appropriations granted several years apart. This has caused different artists to bring together elements that frequently would not mix. Mr. Gilbert, however, has designed the Public Library at Detroit down to the last detail, and no anomaly is to be

Vista of Mosaic Arches in Loggia



"At First the Infant"

"And Then the Whining School Boy"

feared through the application of a form of ornament composed and imagined by another mind than his. This insures a homogeneous ensemble, and nowhere is the blending of architecture and decoration so happy as in the mosaic ornamentation of the apses of the frontal colonnade of the library.

This work was given by Mr. Gilbert into the keeping of Frederick J. Wiley, known for his decorative work in the Newark, N. J., Courthouse, the University of Texas, the Woolworth Building in New York, and the Fine Arts Building at Oberlin College.

Mr. Wiley has chosen as subject for the decoration of the seven arches Shakespeare's Seven Ages. The mosaic is executed of grès flambé, which is to say that the tesserae are of enameled baked clay and not of glass.

Needless to say, the spirit of the decoration is in keeping with that of the general building and is inspired by the best examples of Italian Renaissance. Each arch is divided into four irregular panels, symmetrically connected with garlands and ornamental motifs, while one circular and two octagonal cartouches are set in between the four panels. Each arch portrays one of the Seven Ages, and the appropriate quotation from Shakespeare is lettered in the apex of the arch.

Mr. Wiley has been very happy in the treatment of his theme, and this has contributed not a little to the success of the decoration as a mosaic. It is not enough to assemble a quantity of multi-colored cubes into a design—too many have done it and in so doing have added nothing to the vogue and appreciation of mosaic as a medium of artistic expression. The artist must also obtain, by the rhythm of his design, the balance of every motif introduced—not only with the corresponding motif opposite, but with the scale of the loggia itself—a harmonious and yet brilliant effect that will bring out the value of pictorial mosaic decoration.

A great feeling of delicacy emanates from the work, together with a strong sensation that the finest tracery, the most fragile line, is yet fixed for all time in imperishable material. The shades blend gradually, yet all the sharpness of outline, requisite in a mosaic as in a tapestry, is retained. Here are sapphire tints that will never fade, and soft yellows that will not turn into browns. The stone of the façade, the masonry of the arch, will grow mellow with age and acquire that "patine" that time gives to cathedrals and marble palaces, but the enamel of the mosaic is impermeable and whatever dust accumulates thereon may be washed off, and leave the

"And Then the Lover"

"Then a Soldier Full of Strange Oaths"

"And Then the Justice"

"The Sixth Age"

Seven Ages as resplendent in color as when originally installed.

Only the other day, in 1909, a fourth century mosaic was unearthed in the Basilica of Aquila, erected about 320. It pictures the Old Testament story of Jonah and the whale and the colors are as distinct and vivid as if the work had been done yesterday. What triumph won over the all-destroying power of Time! Have we not mosaic to thank for having brought down to us the outline and coloring of an ancient Greek painting? The Battle of Arbela mosaic, found in 1830 in the house of the Faun in Pompeii, is undoubtedly a reproduction in stone of an earlier work of art painted on canvas or wood and long since destroyed. It is a battle scene in which are shown fifteen horsemen, twenty-six warriors on foot and a chariot bearing a figure said by archeologists to be that of Darius.

Think of recovering a mosaic mentioned by Pliny in his "Historia Naturalis": the famous Doves of the Capitol, found in Hadrian's Villa near Tivoli. Undoubtedly, if not the original mosaic executed at Pergamos, it is at least a copy of this famed piece.

The churches of Rome contain many examples of mosaics dating back to the Christian era, and the mosaics of Ravenna are a thousand years old. Cima-

bue used mosaic to ornament the apse of the Cathedral at Pisa, and his pupil Giotto used it to good advantage in decorating the Basilica in the Vatican. The walls and ceilings of St. Peter's are rich with them.

Why is it that, with such living lessons as the mosaics in Santa Sophia, Constantinople, St. Vitale in Ravenna, St. John Lateran and Santa Maria Maggiore in Rome, St. Mark in Venice, and those in the Church of Monreale in Sicily, this form of mural decoration should have suffered practical banishment?

The answer may be found in the fact that, beginning with the seventeenth century, the mosaicists of the time applied themselves to the impossible task of reproducing paintings. The mosaics of St. Peter's do not fulfill the true aim of monumental wall decoration, because there is apparent in them a desire to imitate as closely as possible the finish of oil, or fresco, painting. In art it can be laid down as an axiom that the material dominates the treatment. There are effects obtainable with a brush that cannot be rendered on a loom or with assembled cubes of glass or enameled clay. Conversely, there are effects, and splendid and glorious they are, that mosaic, and mosaic alone, can produce. The domes and spandrils of St. Mark and the Capella Palatina

"Sans Teeth, Sans Eyes, Sans Taste, Sans Everything"

hold spaces of changing lights and glorious mysteries of shadow that bring out the glow of mosaic as a flat surface would not. The apse is the ideal position for the setting of mosaic, as here the illumination is from below. Even on flat surfaces, however, mosaic, treated as mosaic and not as a "stunt" to imitate fresco, has a decorative value that architects have not begun to realize.

It may well be also that architects have been turned from their purpose of utilizing mosaic by the consideration of time and the difficulty to find competent technicians. The tradition is that it took one hundred and thirty-three artists ten years to do the mosaic in the Church of Monreale. It is also recorded that, nearer the present day, mosaicists were engaged more or less intermittently from 1863 to 1892 in installing the mosaic in the dome of St. Paul's Cathedral, London. This decoration, which is placed within eight spandrils, represents the Four Evangelists, designed by Watts, and the Four Apostles, designed by Alfred Stevens. The apse, sanctuary bay and choir are also decorated with mosaic, and the ensemble constitutes the most pretentious and most important use of pictorial mosaic of the present day.

No doubt it is quicker and easier to decorate the inside of an arch, or any wall surface whatever,

with fresco than with mosaic; but should this consideration sway the artist who plans a lasting monument, and should not the advantages be weighed as well as the difficulties? That it does not take forever to install a mosaic is demonstrated by what Mr. Gilbert and Mr. Wiley have done in Detroit. Each of the seven panels measures twenty-six feet in length by four feet, five, in breadth. The work was begun in the Fall of 1919 and finished in November, 1920. The actual time occupied in the execution of the work, *i. e.*, the assembling of the tesserae, their manufacture, the setting in place, in fact all the manual labor involved, was less than seven months.

The technique employed is interesting enough to deserve description.

The first process, naturally, is the mixture and composition and subsequent baking of the clay and its enameling. There is a departure from the processes utilized in the mosaic works of the Vatican or those employed by the Salviati establishment in Venice, and, until its disappearance, by the Imperial Manufacture of Mosaic at St. Petersburg.

The tesserae manufactured in Minton Pottery for certain figures in the mosaic of the South Kensington Museum, London, come nearer to the product manufactured and utilized in the Detroit

Public Library mosaic. The frequent reproach addressed to mosaic made of glass tesserae is that they sparkle excessively and that, instead or reproducing high lights, they present a glare when the mosaic is looked at from a certain angle. The best opinion demands that tesserae made of opaque material should be used for the high lights, and the transparent pieces reserved for the shadows.

The degree of baking cannot be stated in calories, as it depends on the size of the kiln or furnace. The maximum degree of heat can be obtained in a kiln muffle ten feet by ten feet in one hour, which would take one hundred hours to obtain in a kiln twenty feet in diameter. In certain potteries there still persists a tradition regarding the time element, and in these medieval kitchens they point with pride to a red or green which has taken forty hours to develop. Nor would it be possible to convince these primitive ceramists that the same result could be obtained in forty minutes in a test kiln.

The substance out of which the Detroit tesserae are made is clay body, both with and without sand or "grog." The tesserae come out of the kiln in three states—unglazed, bright glazed and matt glazed. The coloring is obtained by metallic oxides, carbonates and sulphites; but there are different degrees of oxidation, and copper, for ex-

ample, will yield not only three primitive colors—yellow, red and blue—but also mixed shades, like orange, green and violet. The metals chiefly employed are gold, silver, copper, manganese, lead, tin, antimony, cobalt, chromium and iron. Carmine, purple and rose colors are obtained by gold; yellow is produced by silver, lead and antimony; blue by cobalt; red by copper; brown by manganese; black by iron; green by copper and chromium, and orange by lead.

The material comes out of the kiln in long sticks or ribbons of various widths, which are then broken up into small cubes about three-eighths of an inch square.

As for the assembling of the tesserae into the finished mosaic, there have been two methods, the one consisting in assembling the small cubes face down over a tracing of the design prepared with glue, and the other by setting them one by one "in situ." This last, because it offered so many difficulties, has been practically discarded. The second process, as used in the St. Petersburg ateliers, consists in setting the mosaic within a frame about one-half inch deep. In this frame a white surface of plaster is laid out, upon which the composition is sketched piece by piece, it being thus determined with precision just where each tessera is to lie. The

plaster, which yields softly to the knife, is cut carefully away, and just as carefully is each square ground, filed and fitted into its proper cell. This is a very slow process, and the Last Supper, made for the St. Isaac Cathedral in St. Petersburg, measuring eighteen feet in length and engaging the labor of five different artists, took four years to finish. The weight of such work is so great that the enclosing framework requires the utmost strength and solidity. A mosaic sent to the Paris Exposition of 1867 from the Russian Imperial Mosaic Factory weighed no less than seven tons. When the last of two or three hundred thousand tesserae entering into the composition, as the mosaic of the Last Supper, is in place, the whole picture is turned on its face and the plaster cut away from the back. The roots or fangs of the cubes being thus laid bare, Roman or Portland cement is run over the whole surface. A solid back being thus put to the picture, the work is ready for its final installation. During its execution it has been in the nature of an easel picture, and upon being completed it is built into an architectural structure and assumes a monumental character.

The method employed in the Detroit Library mosaics, however, is far in advance of this antiquated procedure. Here the tesserae are glued face

up on a working drawing so that the work may be seen and corrected and changes made as it progresses. It is not uncommon for the design to be pasted five or six times before the desired result is obtained. When the mosaic is finished, a second paper is glued on the face and the first paper is sponged off.

The cement into which the mosaic is finally imbedded also plays an important rôle, since upon its durability depends the life of the mosaic itself. The early mosaics were all set in lime cement, which means that the mosaicists of the time had to set the tesserae into a quick setting substance, rendering correction of shading or design almost impossible. It was not until 1528 that Muziano di Brescia thought to set the tesserae in oil cement, which did not harden for two or three days. Since the sixteenth century practically all pictorial mosaic has been done upon a foundation of oil cement.

As to the number of colors available, it is only necessary to recall that the ateliers of the Vatican boast twenty-eight thousand gradations. This profusion of shades, however, is not at all necessary to the decorative success of a mosiac; and it is due to the fidelity with which the Vatican mosaicists reproduced every tint and nuance of a fresco or oil

original that the mosaics of the Pontifical ateliers owe their ill repute as monumental decorations.

The rôle of mosaic as a mural adornment has been much better understood by the French painter and decorator, Louis Edouard Fournier, who designed the frieze for the façade of the Grand Palais in Paris, and who used three tones only against a uniform background of red.

An attempt to reproduce light and shade, or the delicate chiaroscuro of a canvas, must be doomed to inglorious failure when the medium to be used is mosaic. One of the great qualities of the Detroit Library mosaic is that while it throws off light from the surface quite as forcibly as a fresco, it does not reflect light as when tesserae of burnished surface shine like a multitude of small mirrors.

The ateliers of St. Petersburg are no more, and the South Kensington shops are closed. In a small way mosaic is being manufactured at the Sèvres factory near Paris and in the Vatican factory in Rome. Here in this country we have few opportunities for utilizing the work of mosaicists. At first, artists in this medium were imported from Italy. Some, in fact, continue their calling here and there whenever the occasion arises or the opportunity presents itself. The Detroit Public Library mosaics, however, were set for the most part by

young American girls who have engaged in this work not as if practicing a trade but in the spirit of artists following a career.

Mural Decoration in Children's Room

PICTORIAL GEOGRAPHY

THE precept that life "finds tongues in trees, books in the running brooks and sermons in stones" has inspired the decoration of the Children's Room of the library.

This supposedly educational retreat is ornamented with a mural painting representing the geographical outline of the State of Michigan and adjacent waters with the physical facts so embellished that all the sting is taken out of the study of maps.

To begin with, there are no names to complicate one's enjoyment of the scenic presentment of the "pleasant peninsula." Instead, there are rabbits scampering about and wild geese flying across the water, and fleets of birch canoes, and Indian tepees. No child will turn away from this map and account it one more mystery to solve, one more arid lesson to learn.

He will, however, have his curiosity aroused as to the significance of some of the emblems displayed, as the grand gentleman with the wig and plumed hat in the upper right hand corner is not as obvious as the Indian chief to the left of Lake Michigan. He may also be curious about the caravel or frigate

shown sailing the waters of Lakes Huron and Michigan.

At this point, the attendant in charge will explain the map, and the explanation will stick.

The rich border is a decorative arrangement of the French royal coat of arms centered against a background picturing the gardens and fountains of Versailles, the royal residence of Louis the XIVth under whose reign Detroit and the surrounding territory was settled by the French.

The left border as the central decoration has a round shield such as the early red-skins carried as a defense against arrows. The background is a woodland landscape with rabbits, coyotes and screech owls disporting themselves in the wilderness.

The lower border consists of two tablets inscribed with mottoes in Latin with small medallions between, in which are pictured an Iroquois brave, a French trapper and the explorer La Salle, who visited the site of Detroit in 1670.

The right hand inscription reads: "Si quaeris Peninsulam Ameonam circumspice," which is the motto of the State. While the inscription to the left proclaims the fact that, "Tamen Fit Surculus Arbor."

Within this border are outlined in the bluest blue the waters of Lake Superior, Lake Michigan,

Lake Huron and Lake Erie. The land which environs them in a vista of trees and prairies, with here and there a group of Indian tepees or a windmill to indicate Chippewa or Huron villages or white settlements.

Over Lake Superior a flock of wild geese are shown in flight and bark canoes in groups of three or four and manned by red-skins, or trappers, glide over the surface, as also on Lakes Erie and Huron. In Lakes Michigan and Huron is shown the first ship of war (it carried two brass cannon and three blunderbusses) that ever sailed these placid waters. This was Le Griffon, or the Griffin, built by order of La Salle in 1679 on the shore of Lake Erie "two leagues above the great Fall of Niagara." It took its name from the figure-head which was a flying griffin copied after the griffins which supported the coats of arms of Count Frontenac. Father Hennepin, historian and missionary, writing in his "New Discovery" says that "all the savages inhabiting the banks of those lakes and rivers for five hundred leagues together were filled with fear as well as admiration when they saw it."

Although the map is painted in the tempo of 1700 there is introduced by historical license, a picture of the Battle of Lake Erie which Perry fought on September 10th, 1813, in Put-in-Bay

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near the western end of Lake Erie. The British and American sloops, brigs and ships of war are shown blazing merrily with all their guns, but their number and size has been reduced to come within the frame formed by the painted waters of the lake.

Near the site of what is now Detroit there has been painted a picture of what was once Fort Ponchartrain, a stockade within which the hundred or so French settlers of Detroit lived, traded and fought under la Mothe Cadillac, the first governor of the territory.

Set in small frames at the two lower corners of the map are, at the right, the Church of Ste. Anne, built on the site of the little log chapel erected by Cadillac in 1701 just outside the stockade and repeatedly destroyed by the Indians and rebuilt; and at the left an Indian encampment.

Two figures outlined against a golden halo complete the composition. One, in the upper right hand corner, represents le roi soleil, as Louis XIV wished to be known, mounted on a white horse; and the other in the left margin, shows an Indian chief in all the feathered glory of his rank.

The map measures eighteen feet in breadth by thirteen feet in height, the borders adding several feet, and is painted in subdued colors in which blue and buff predominate. The halos back of the effigy

of the French king and of the silhouetted Indian brave are of gold, as is the territory of Michigan not occupied by forest or settlements. The blue of the waters contrast agreeably with the general tone of the composition and the whole thing might serve as a carton for a tapestry, so pictorial and decorative is it in outline and color treatment.

Taught by this process geography becomes a joy.

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